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FIG. 1

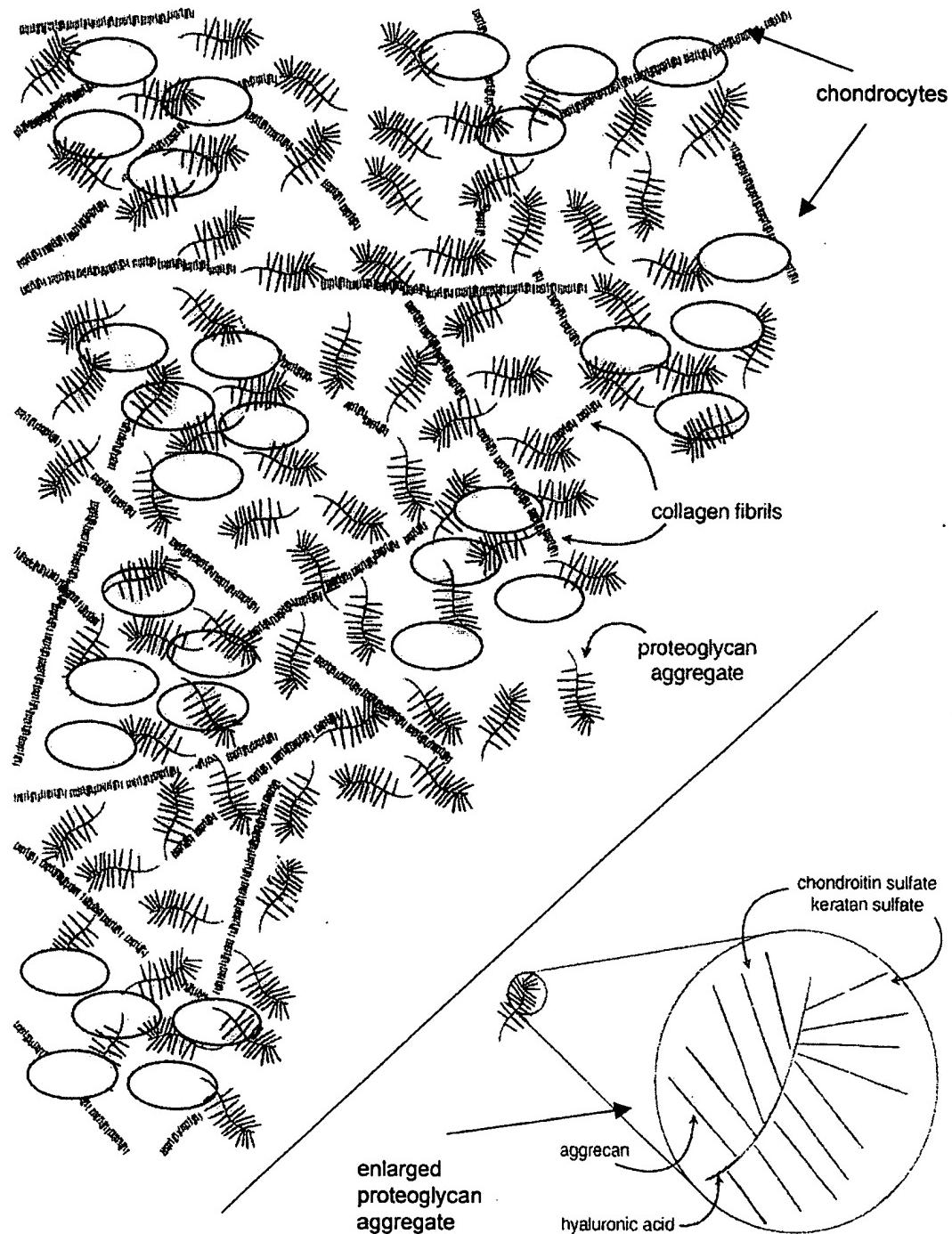


FIG. 1A

FIG. 2

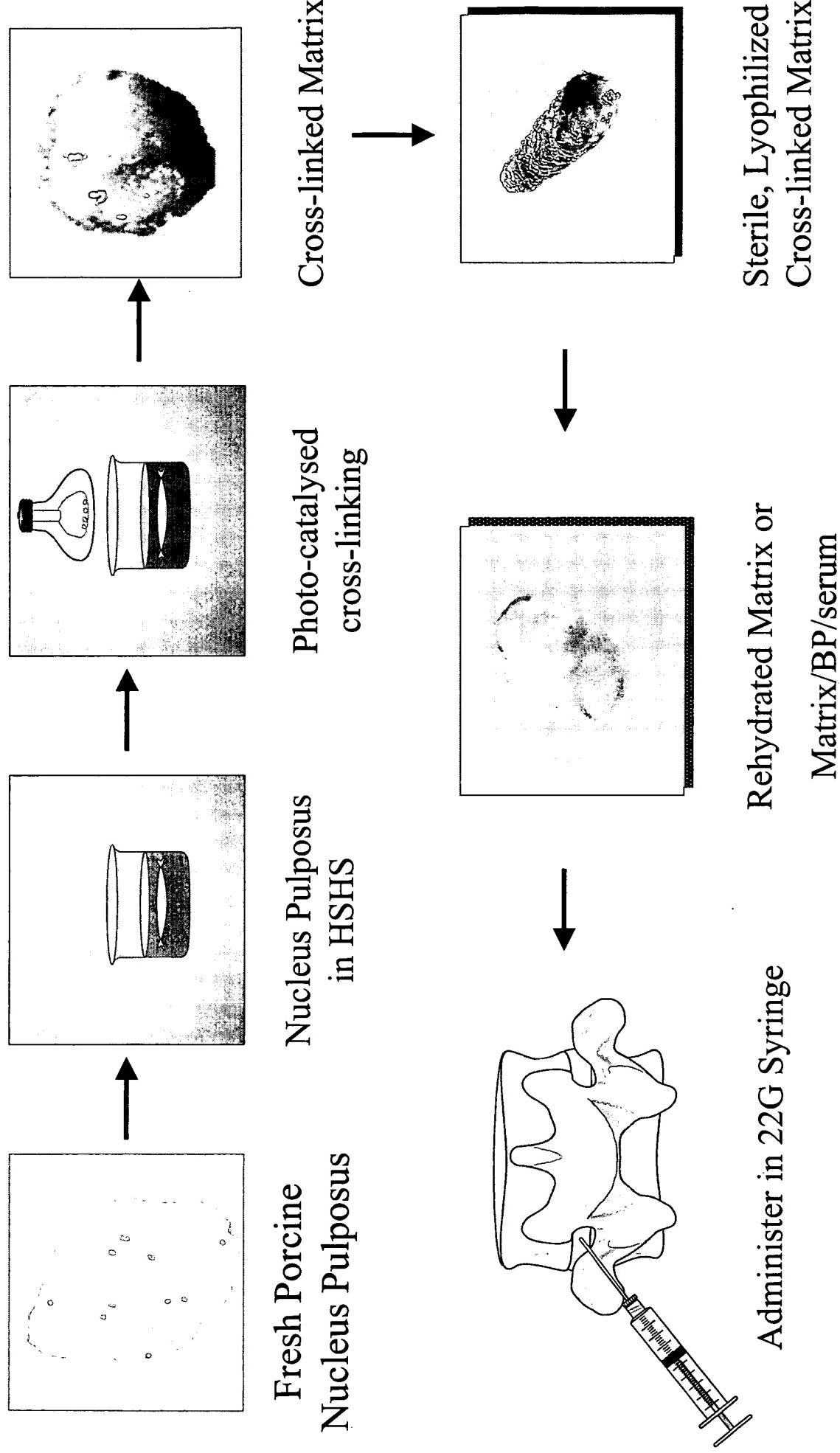
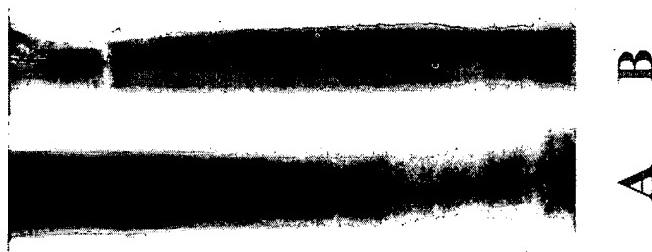


FIG. 3



Cross-linked Matrix

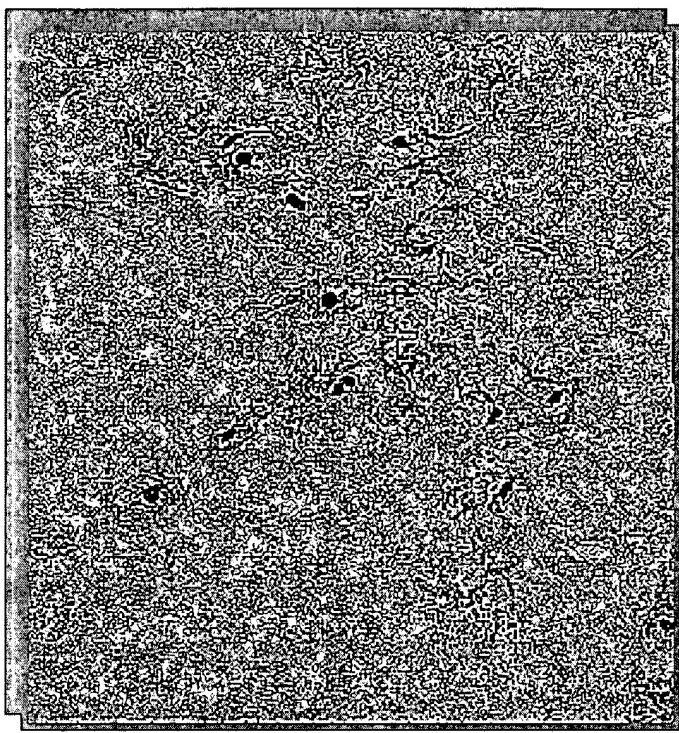


FIG. 4

Fresh Nucleus Pulposus

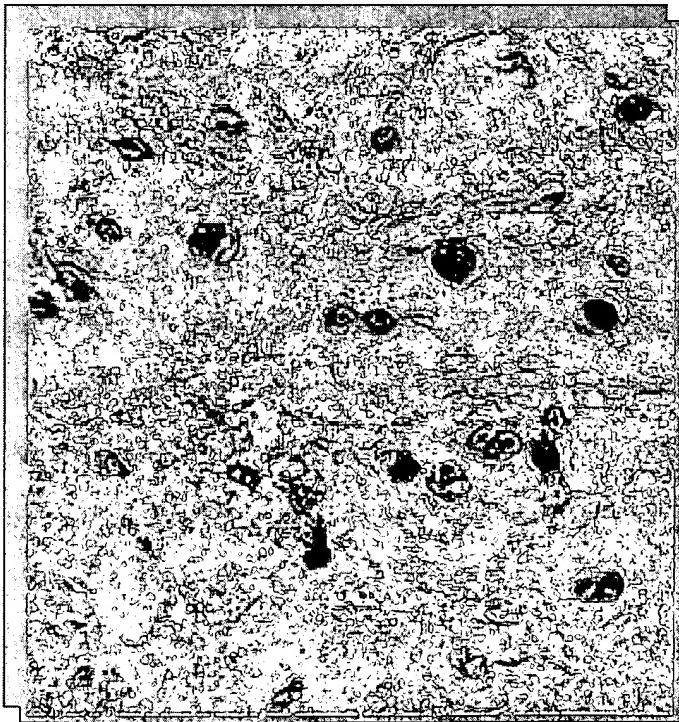


FIG. 5



FIG. 6

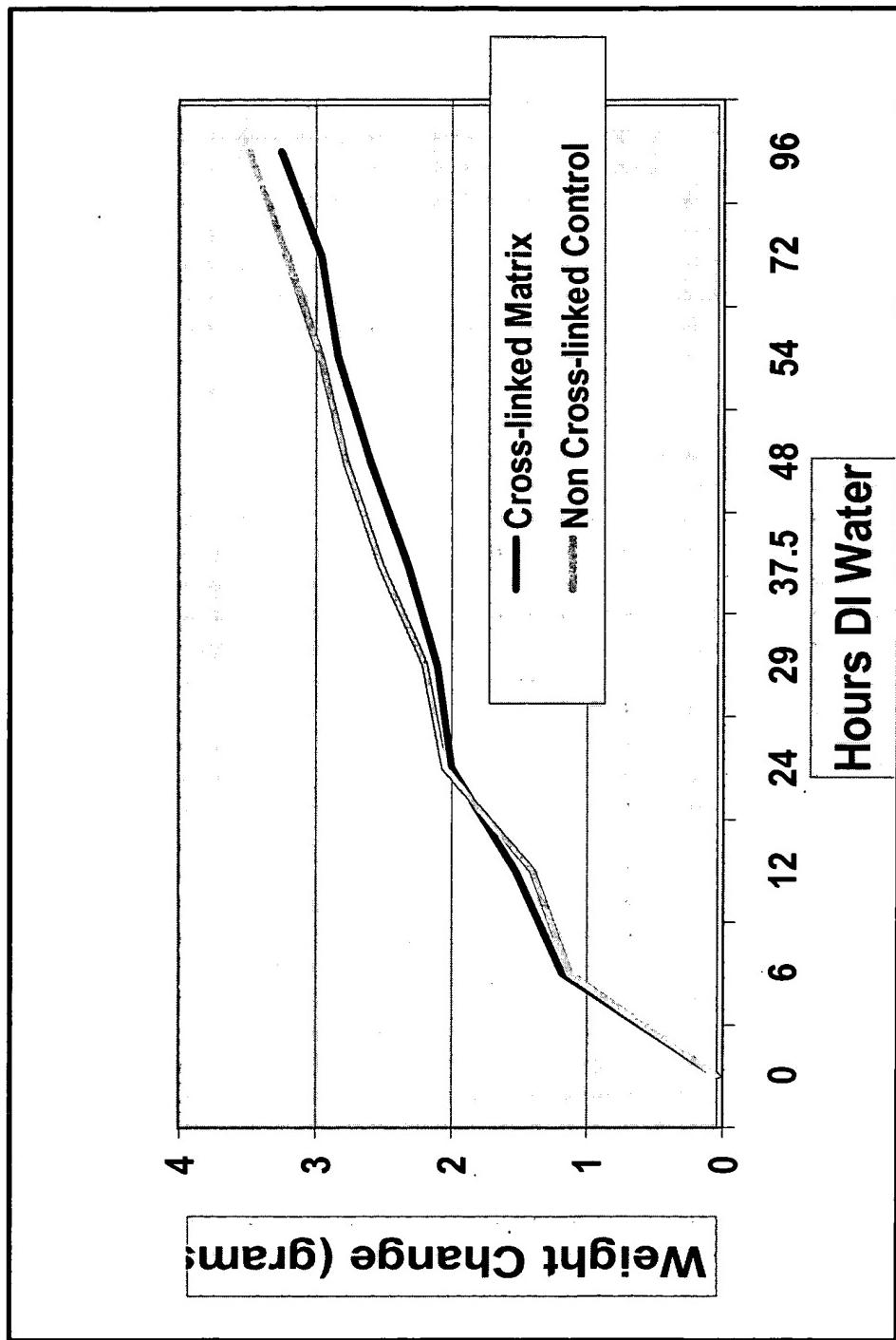
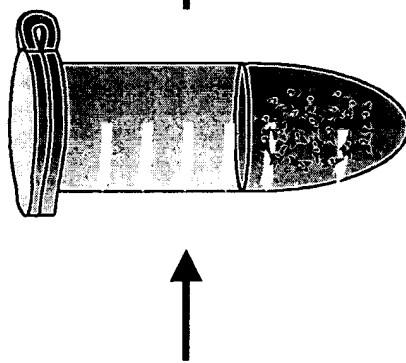


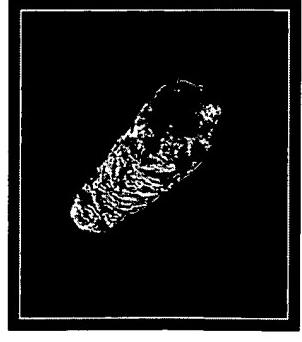
FIG. 7

Culture Expansion
Cell Isolation

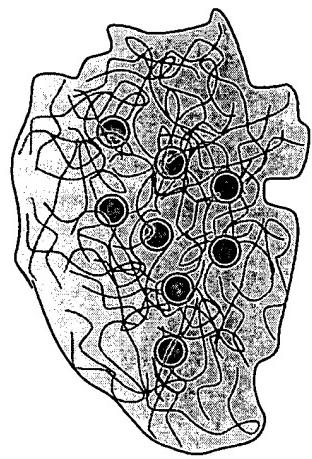
Sterile nucleus pulposus
from sheep spine;
enzymatic digestion for
cell isolation



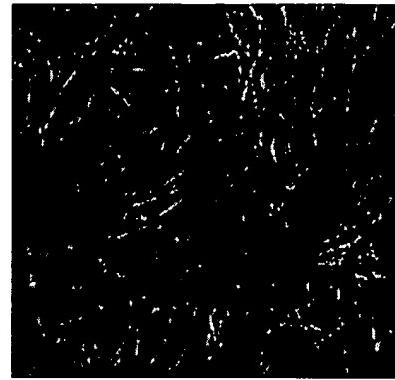
Cross-linked matrix



Cross-linked matrix/BP



Disc Cell Culture in
Cross-linked Matrix/BP



Cross-linked
matrix
seeded with
disc cells &
stained with
phalloidin

FIG. 8

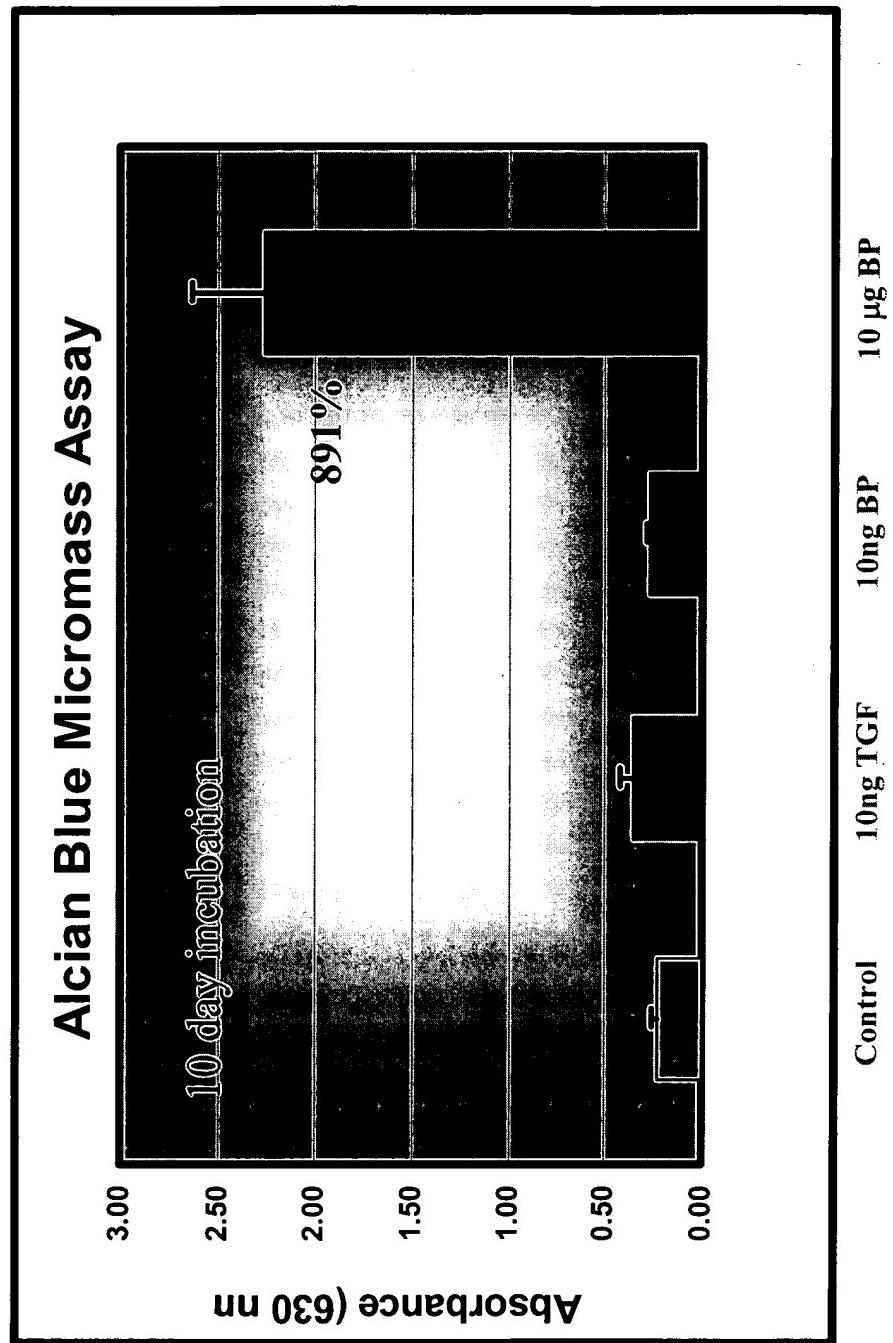


FIG. 9

ELISA Analysis of Cross-linked Matrix

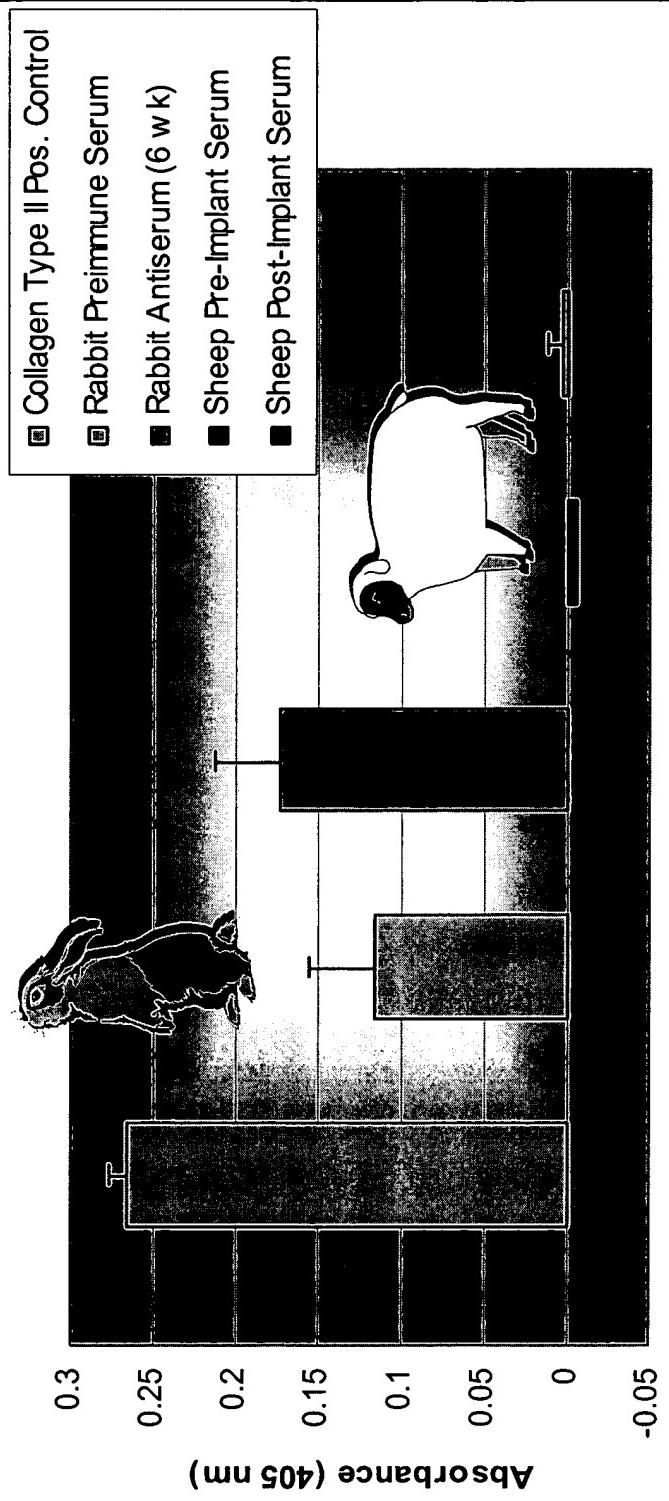
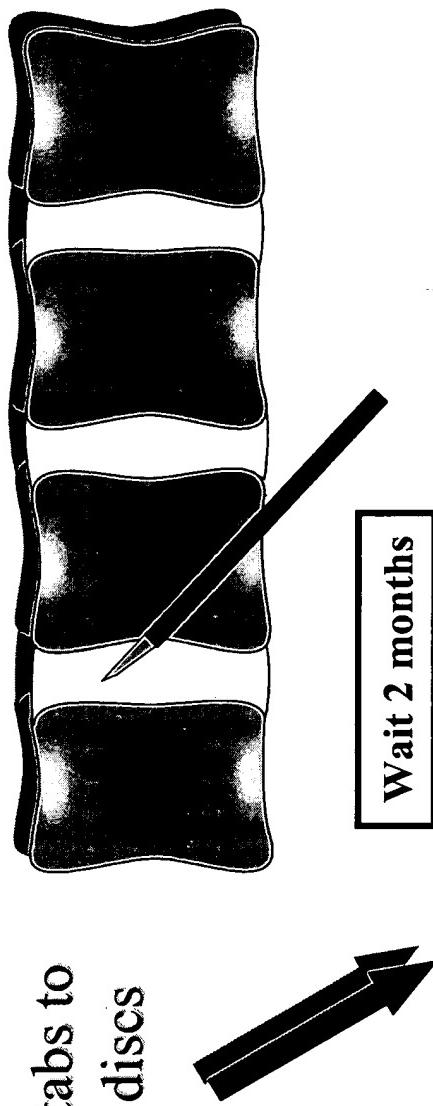
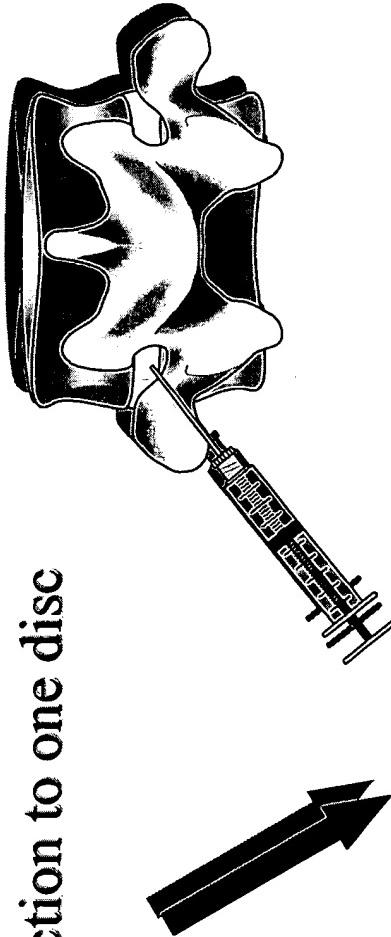


FIG. 10

1st operation: annulus stabs to
create two degenerative discs



2nd operation: Cross-linked matrix/BP
gel treatment injection to one disc



- Histomorphometry
- MRI/radiographs
- Immune response

Sacrifice: 2, 4, and 6 months

FIG. 11

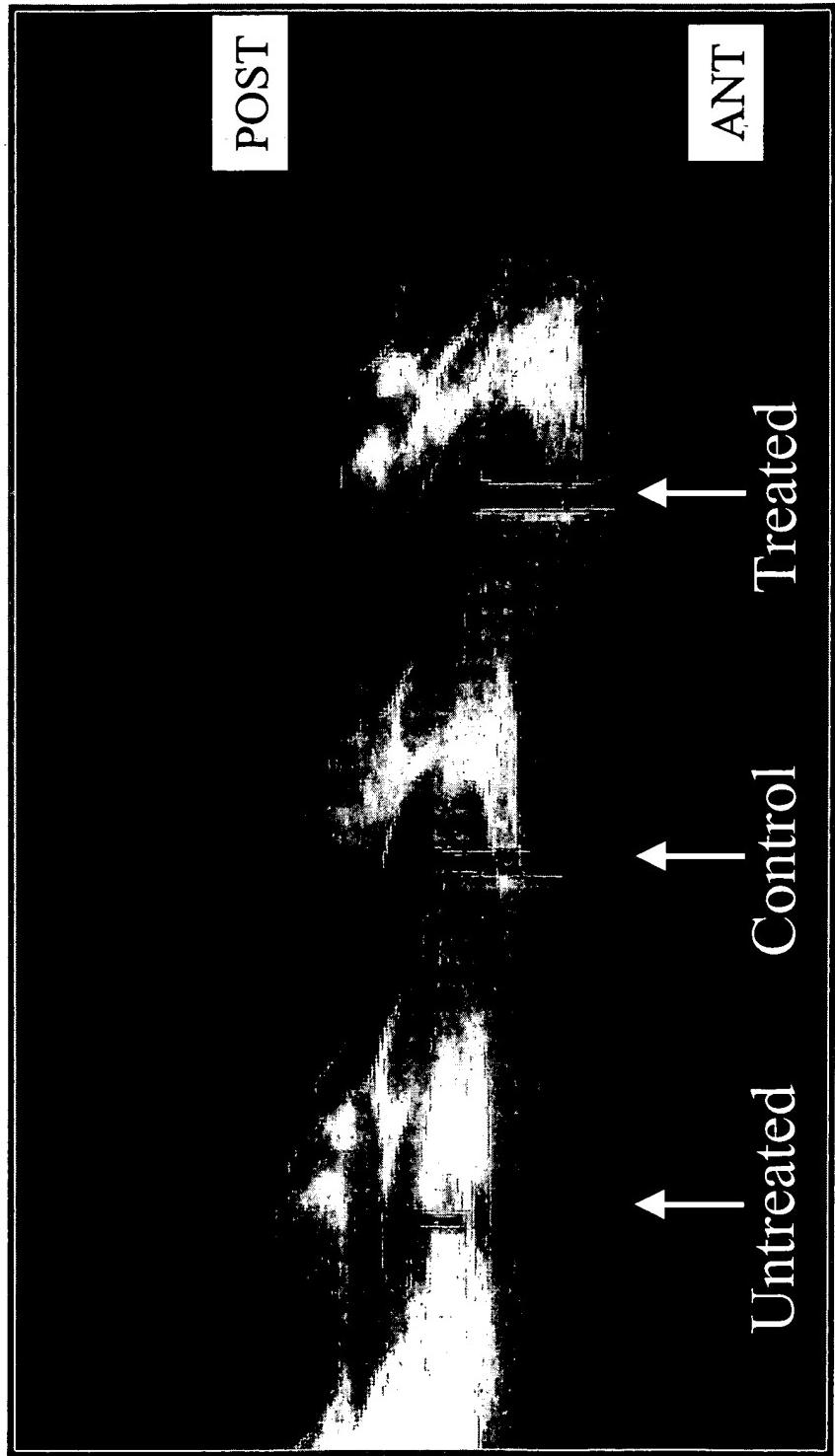
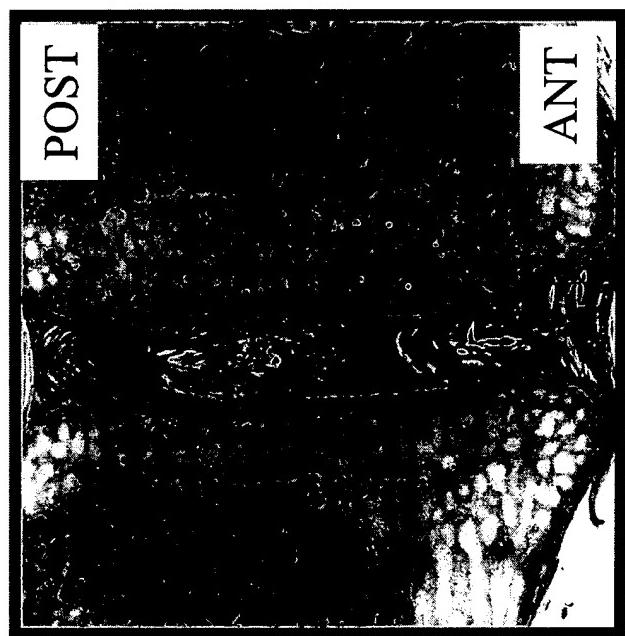


FIG. 12A



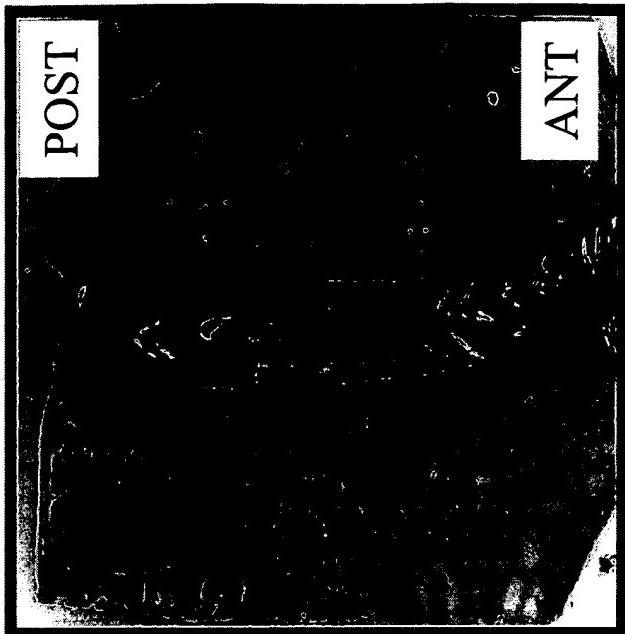
Untreated disc

FIG. 12B



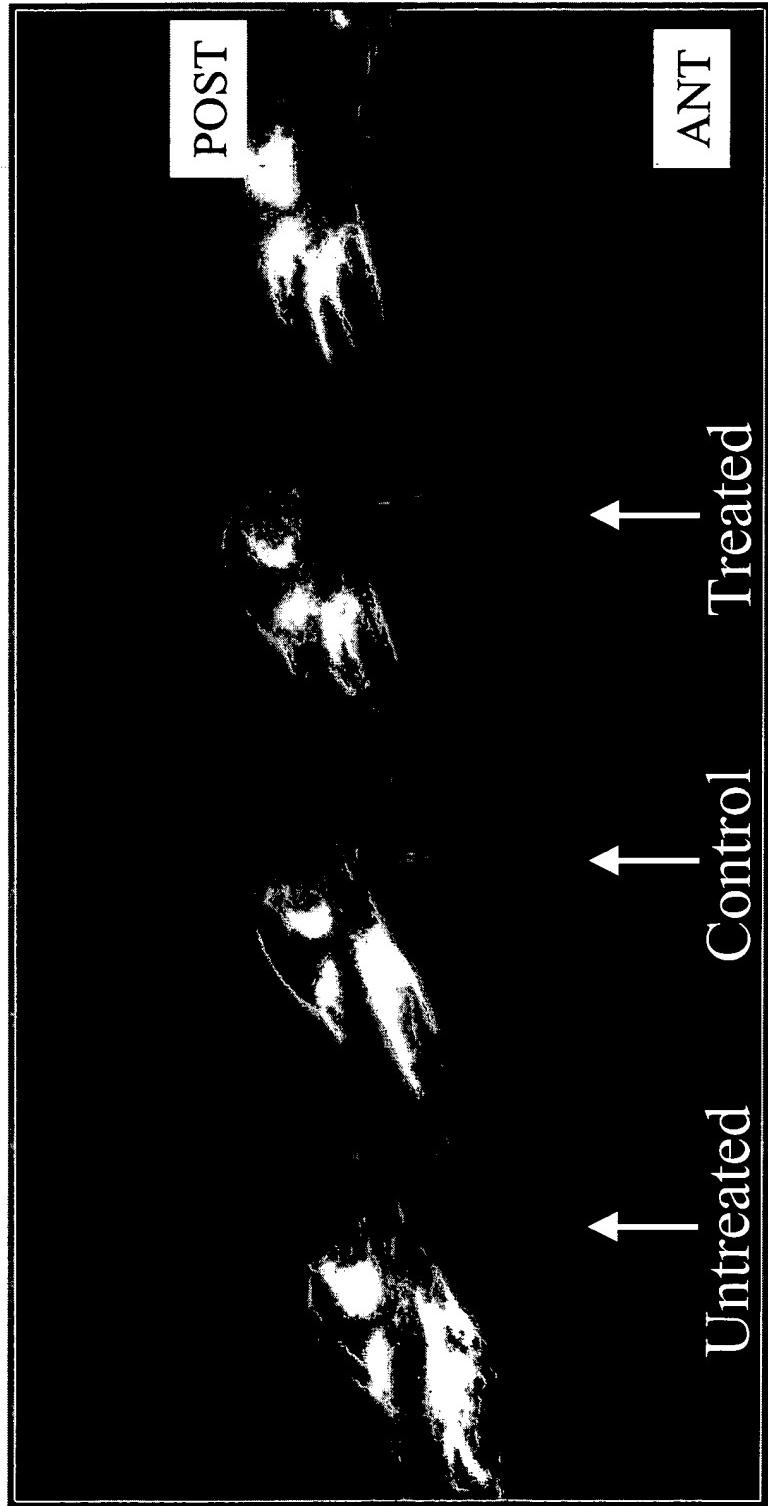
Control

FIG. 12C



Treated disc

FIG. 13



Treated

Control

Untreated



FIG. 14

FIG. 15A

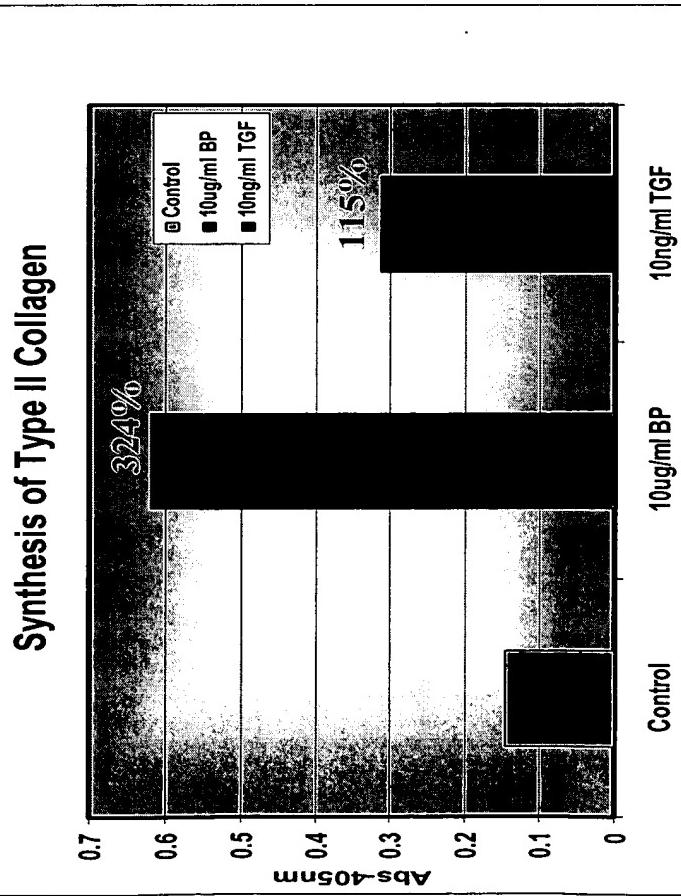


FIG. 15B

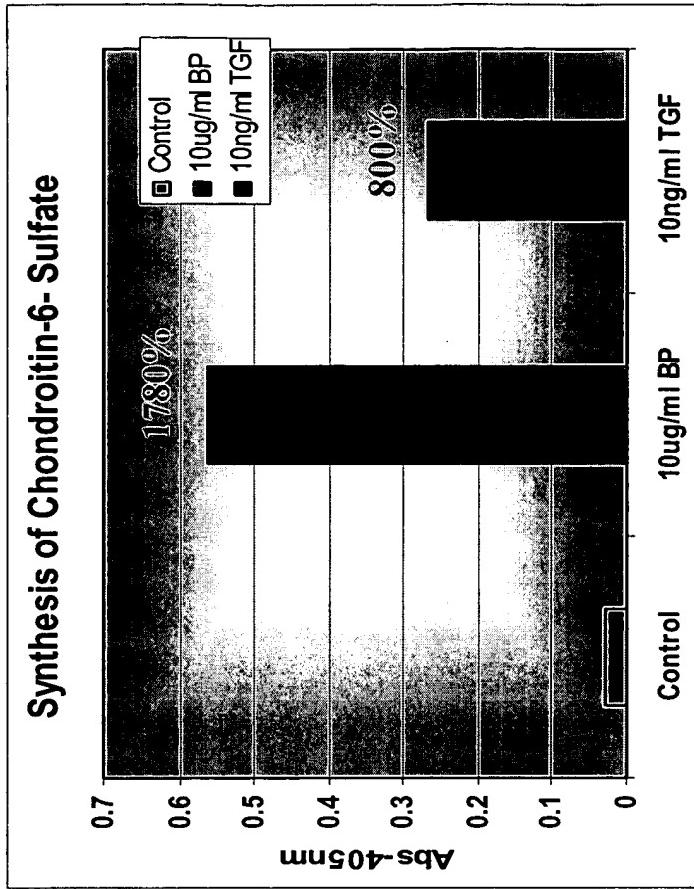


FIG. 16A
Proteoglycan Synthesis in Human Disc Cells

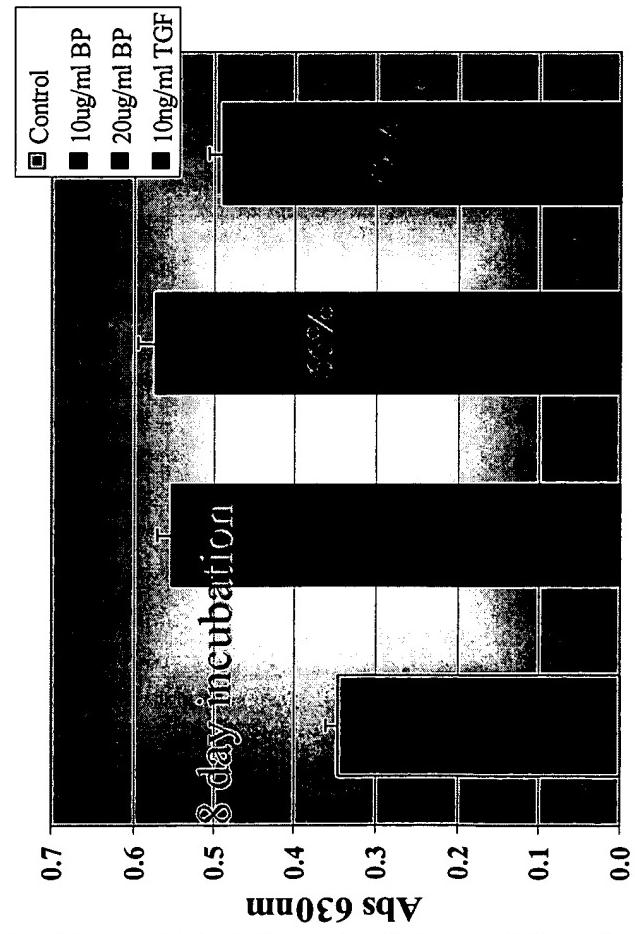


FIG. 16B

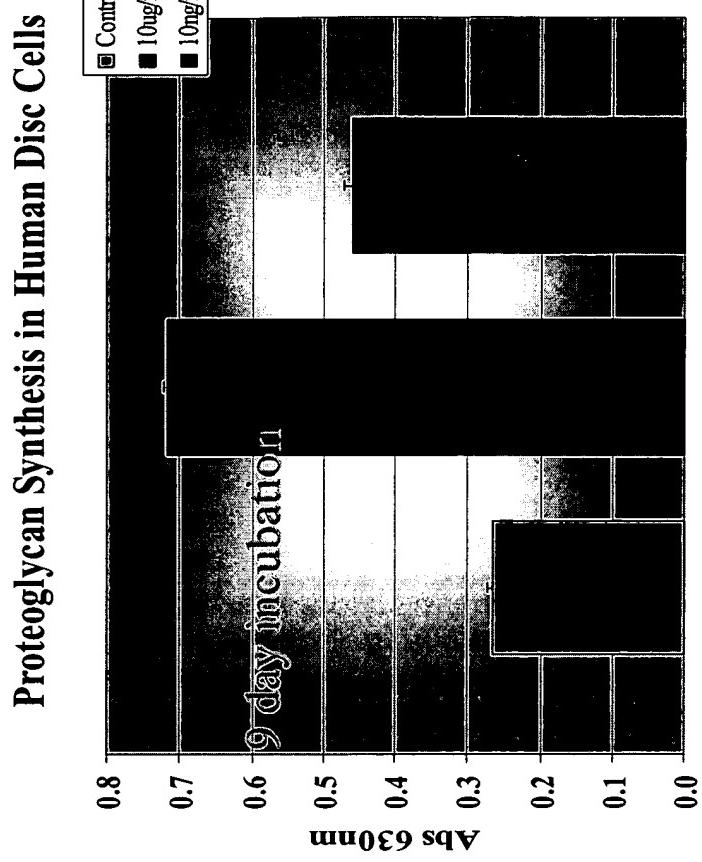


FIG. 17

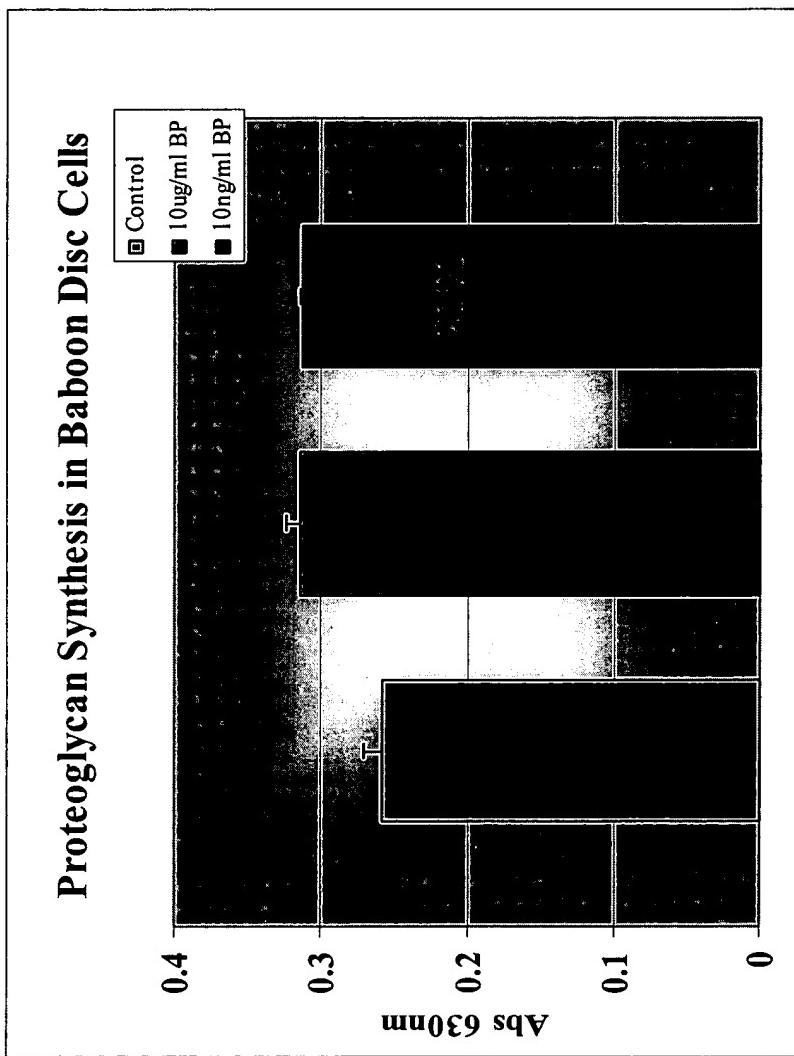


FIG. 18

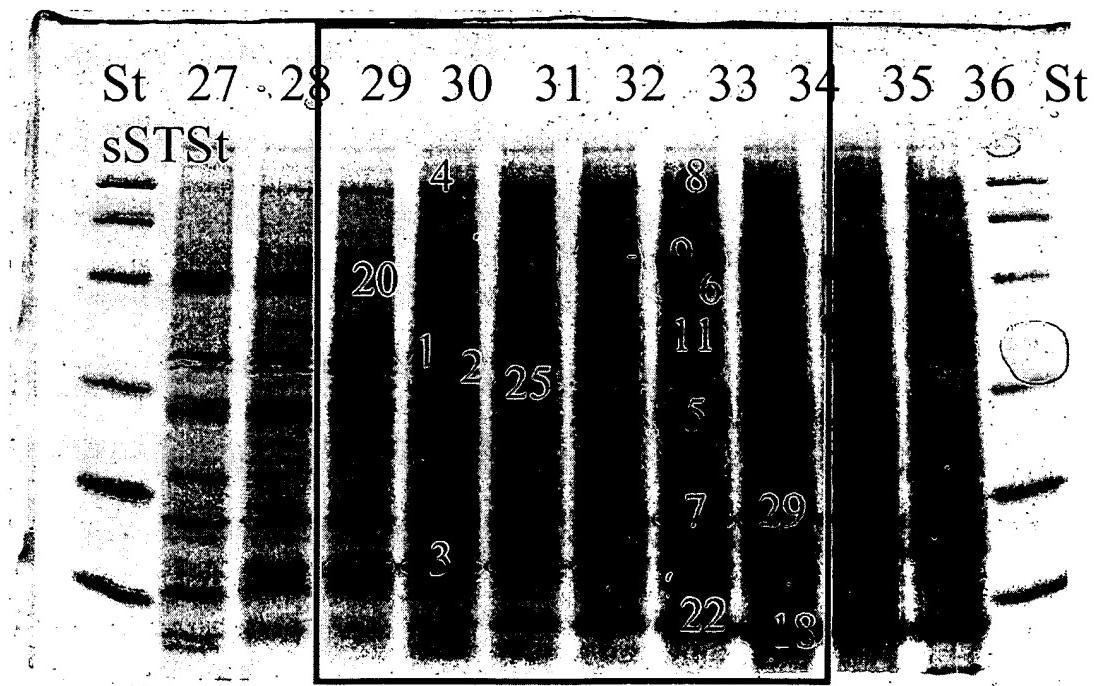
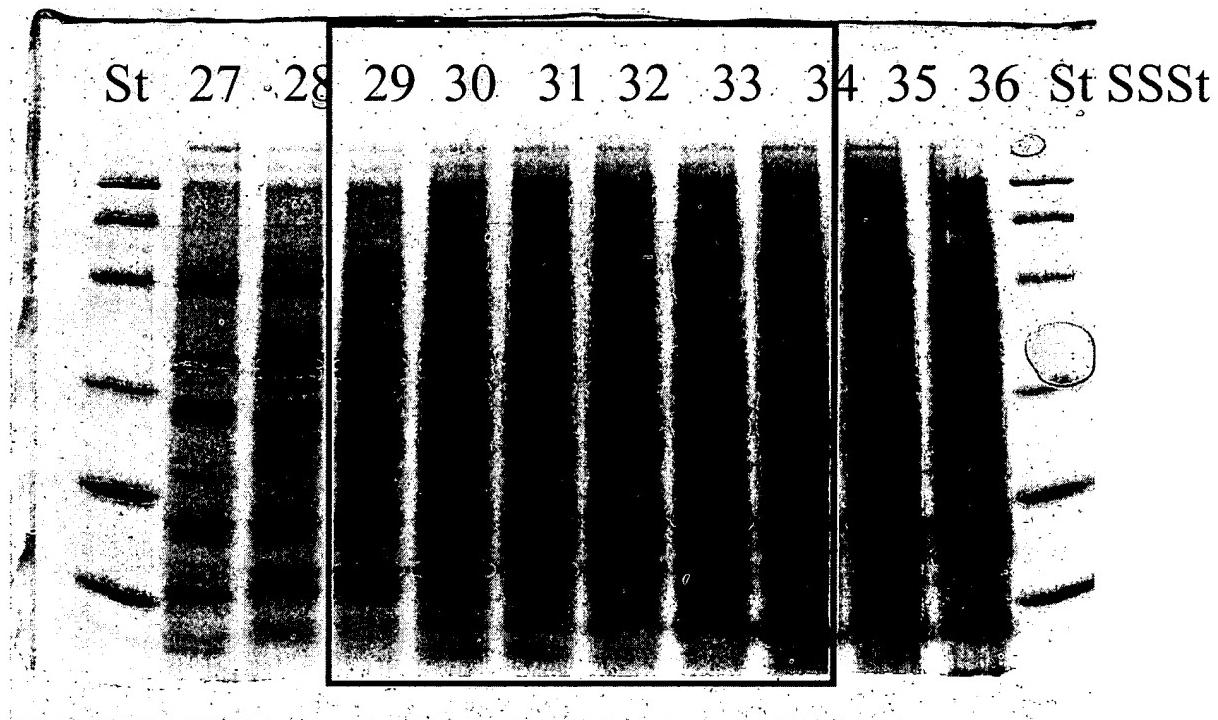
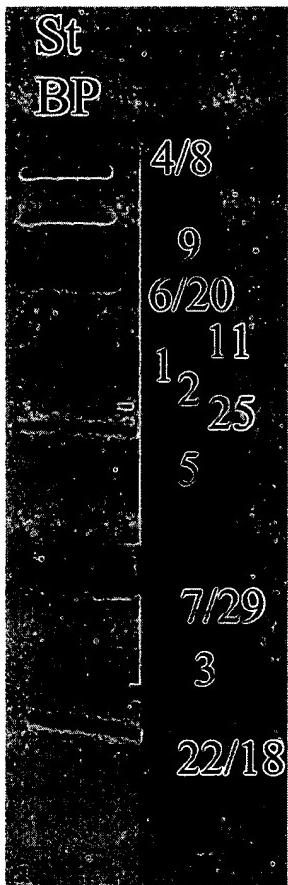


FIG. 19



Band No.	Identity
1	Histone H1.c
2	Histone H1.c
3	Ribosomal protein RS20
4	Similar to ribosomal protein LORP
5	BMP-3
6	α 2 macroglobulin RAP and BMP-3
7	Similar to ribosomal protein LORP
8	BMP-3
9	BMP-3
11	Ribosomal protein RL6 and BMP-3
18	TGF- β 2 / SPP 24
20	Factor H
22	TGF- β 2
25	BMP-3 and H1.x
29	BMP-3 and ribosomal protein RL32

FIG. 20

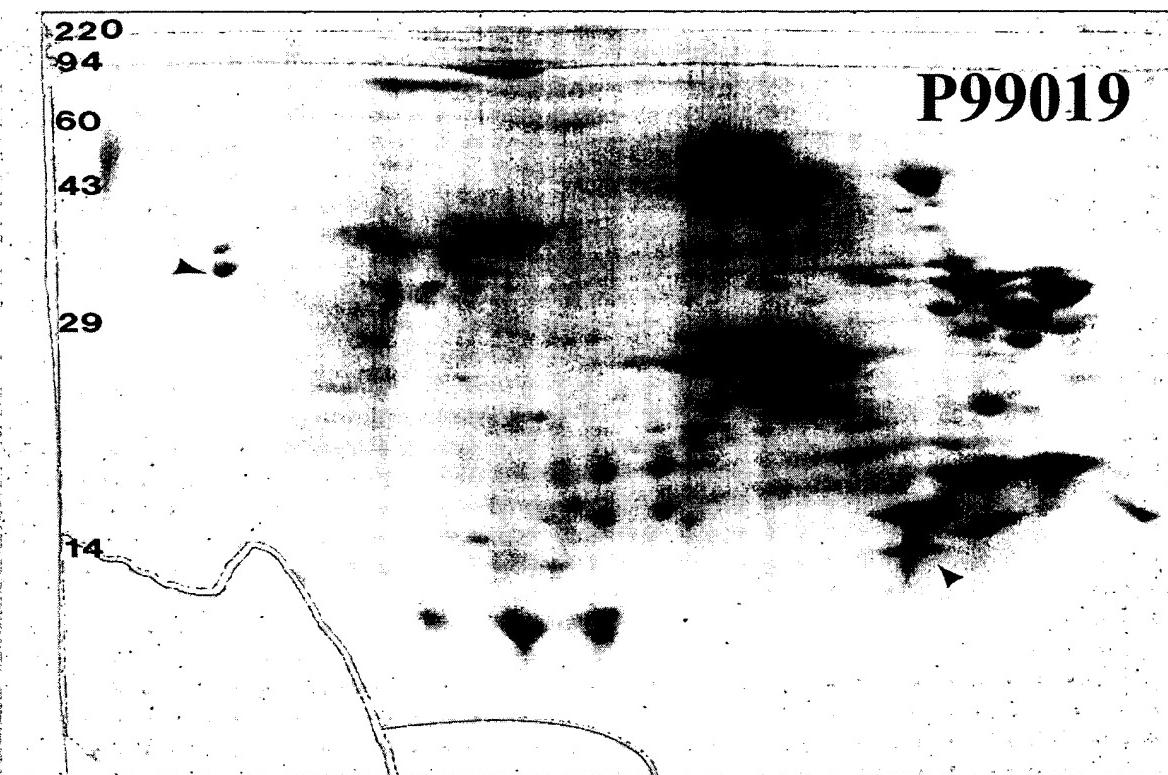


FIG. 21

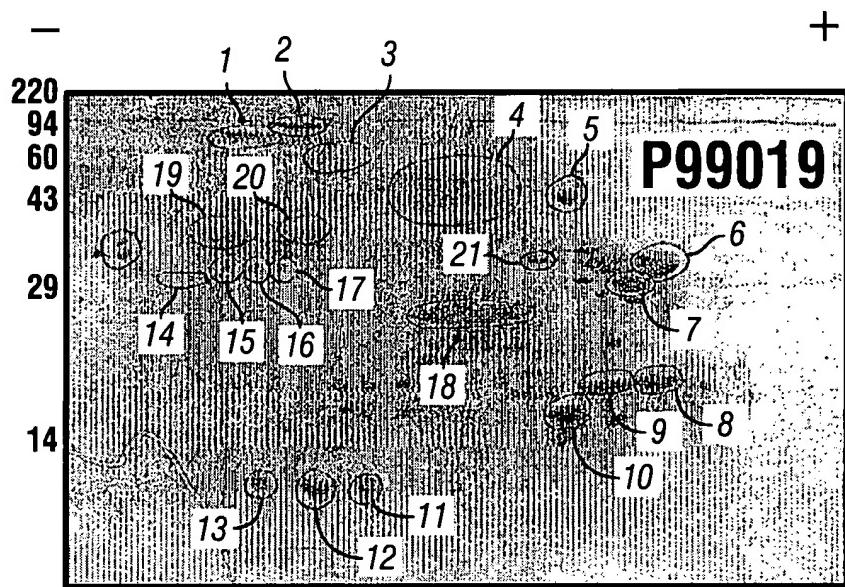


FIG. 22

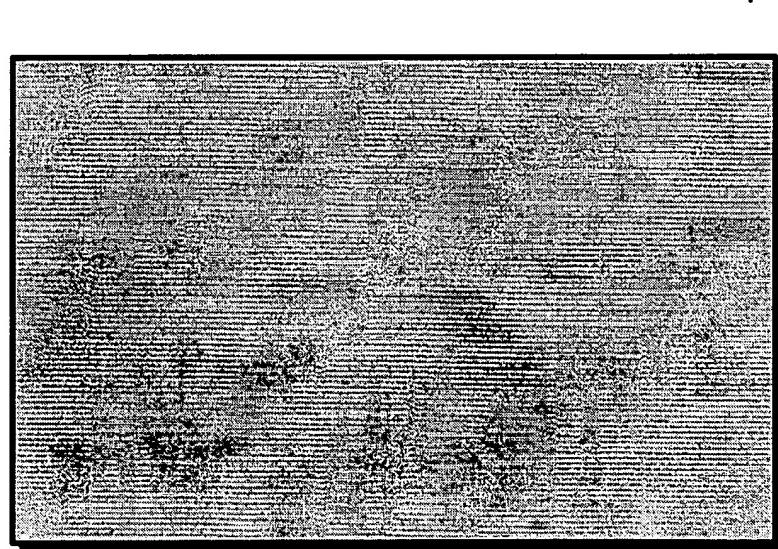


FIG. 24

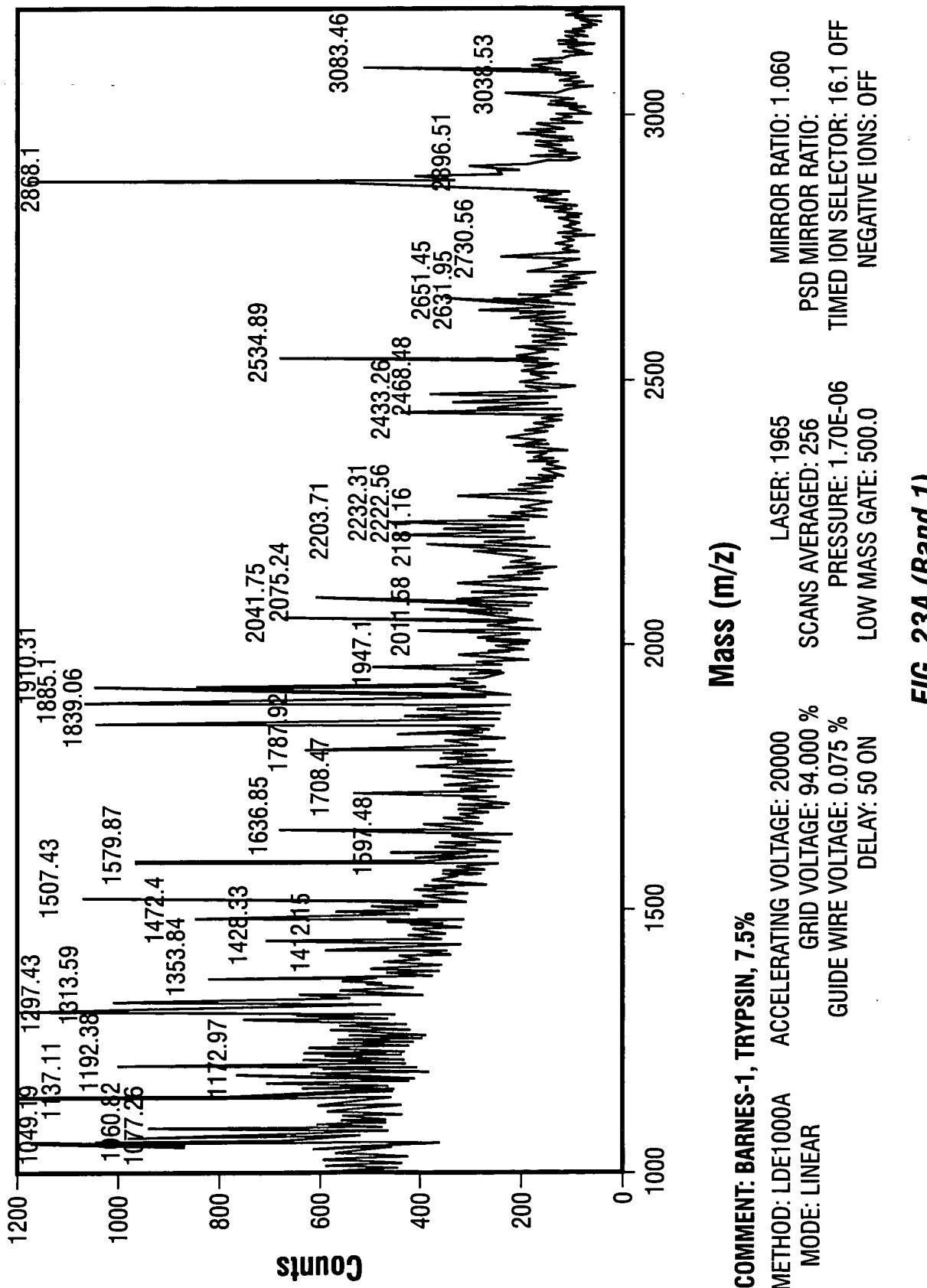


FIG. 23A (Band 1)

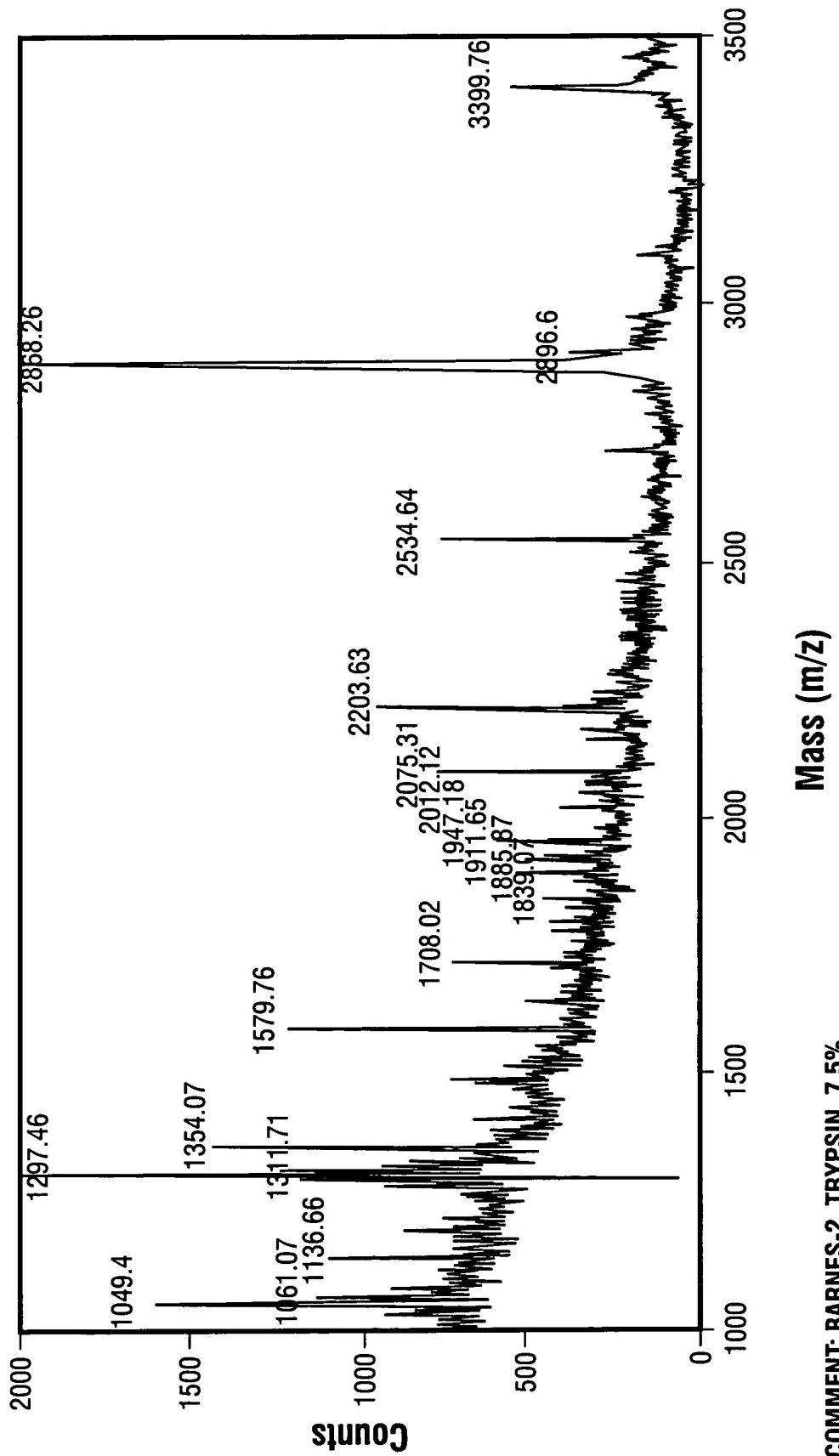


FIG. 23B (Band 2)

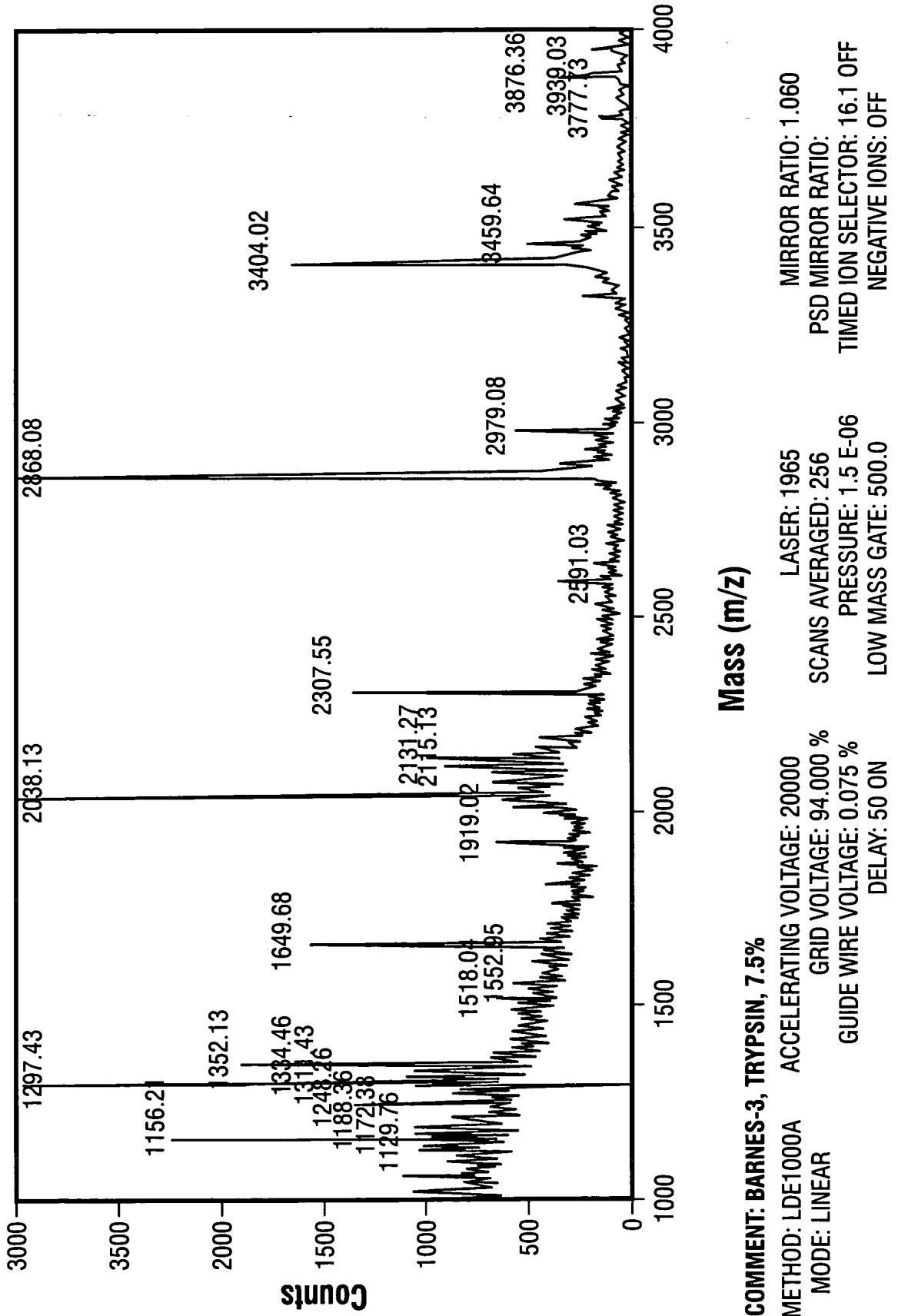
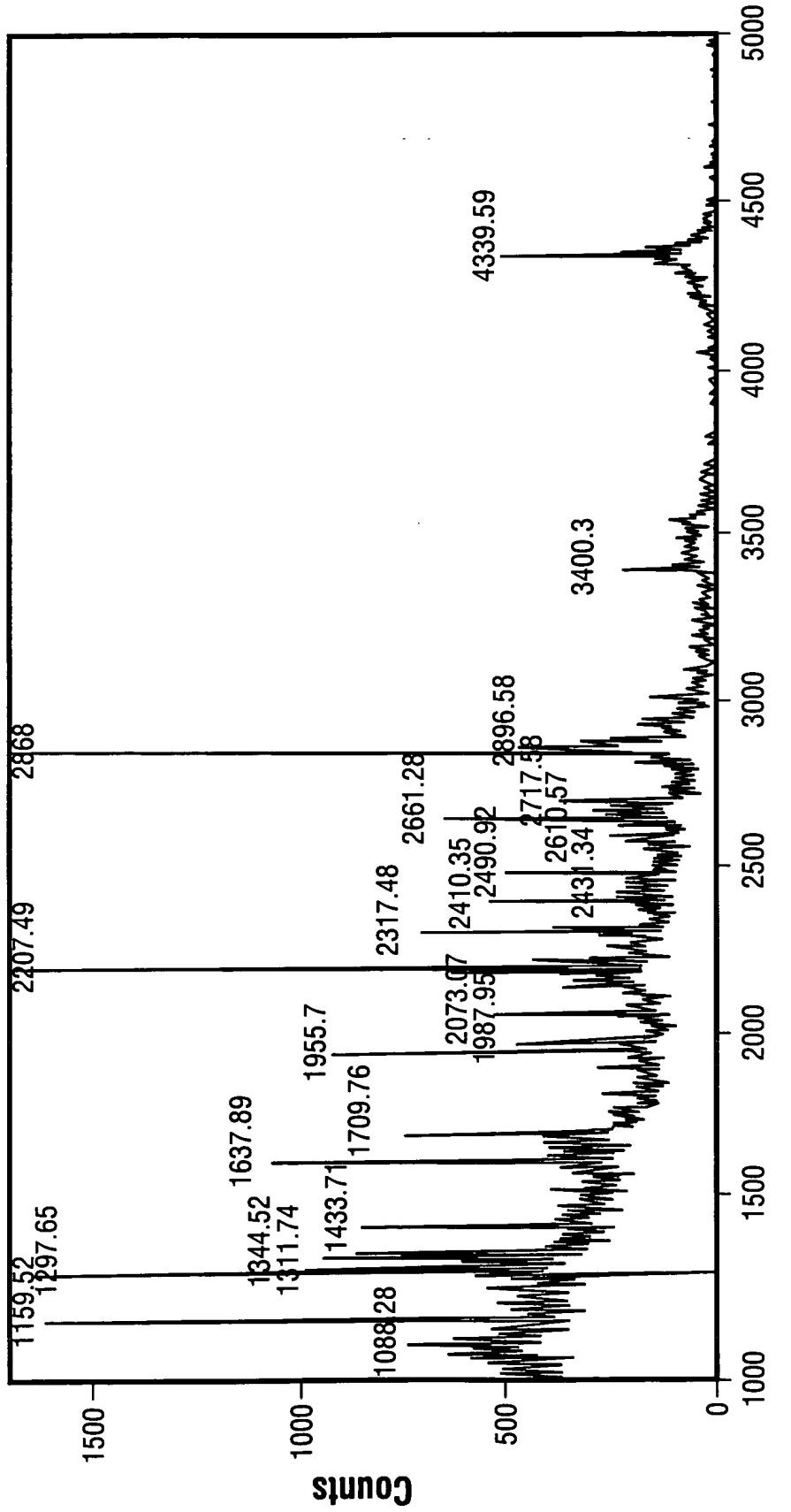


FIG. 23C (Band 3)



COMMENT: BARNES-4, TRY5, 5%

METHOD: LDE1000A ACCELERATING VOLTAGE: 20000
MODE: LINEAR GRID VOLTAGE: 94.000 %
GUIDE WIRE VOLTAGE: 0.075 %
DELAY: 50 ON

LASER: 1965 SCANS AVERAGED: 256
PRESSURE: 9.04E-07 LOW MASS GATE: 500.0

MIRROR RATIO: 1.060
PSD MIRROR RATIO:
TIMED ION SELECTOR: 16.1 OFF
NEGATIVE IONS: OFF

Mass (m/z)

FIG. 23D (Band 4)

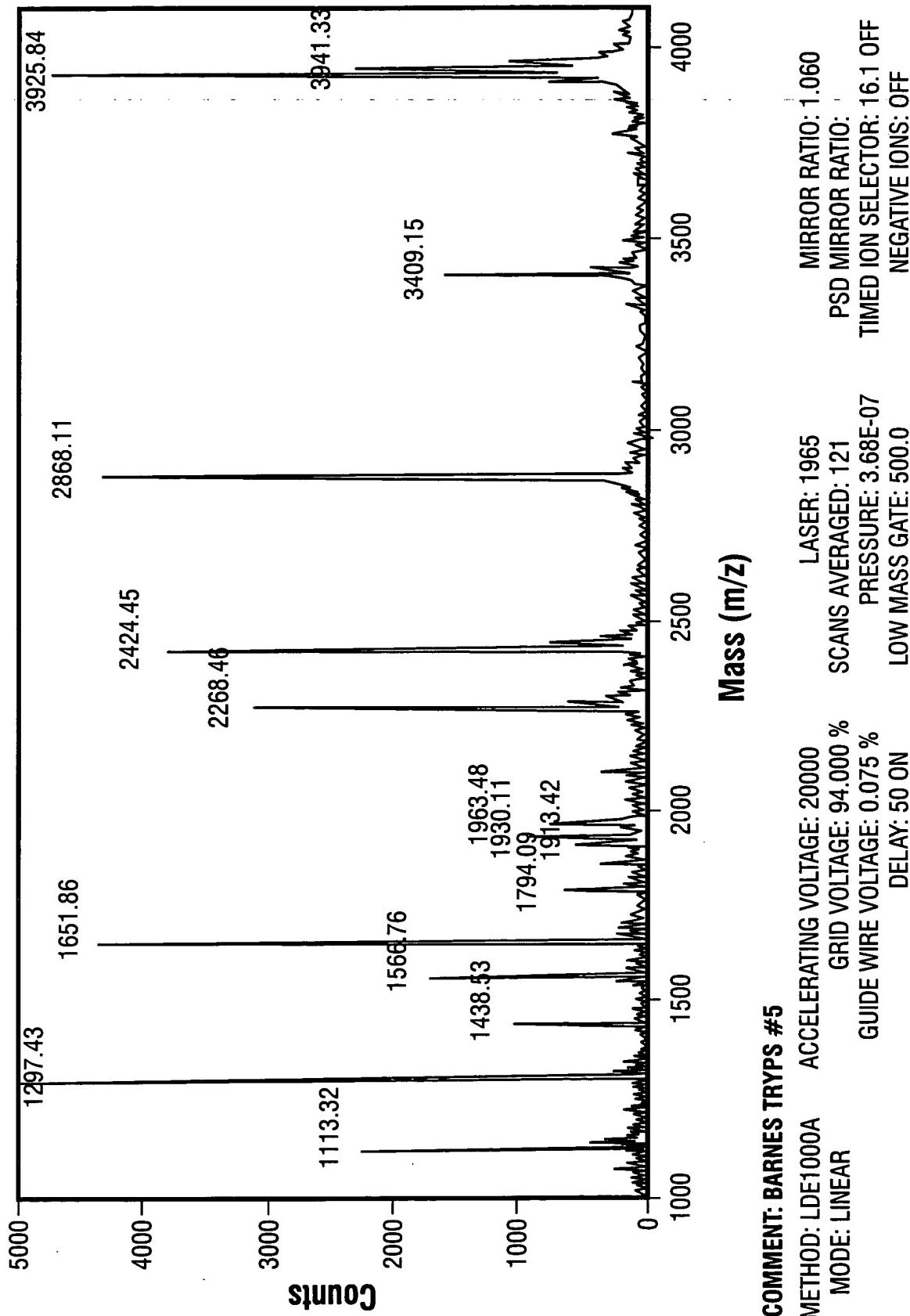
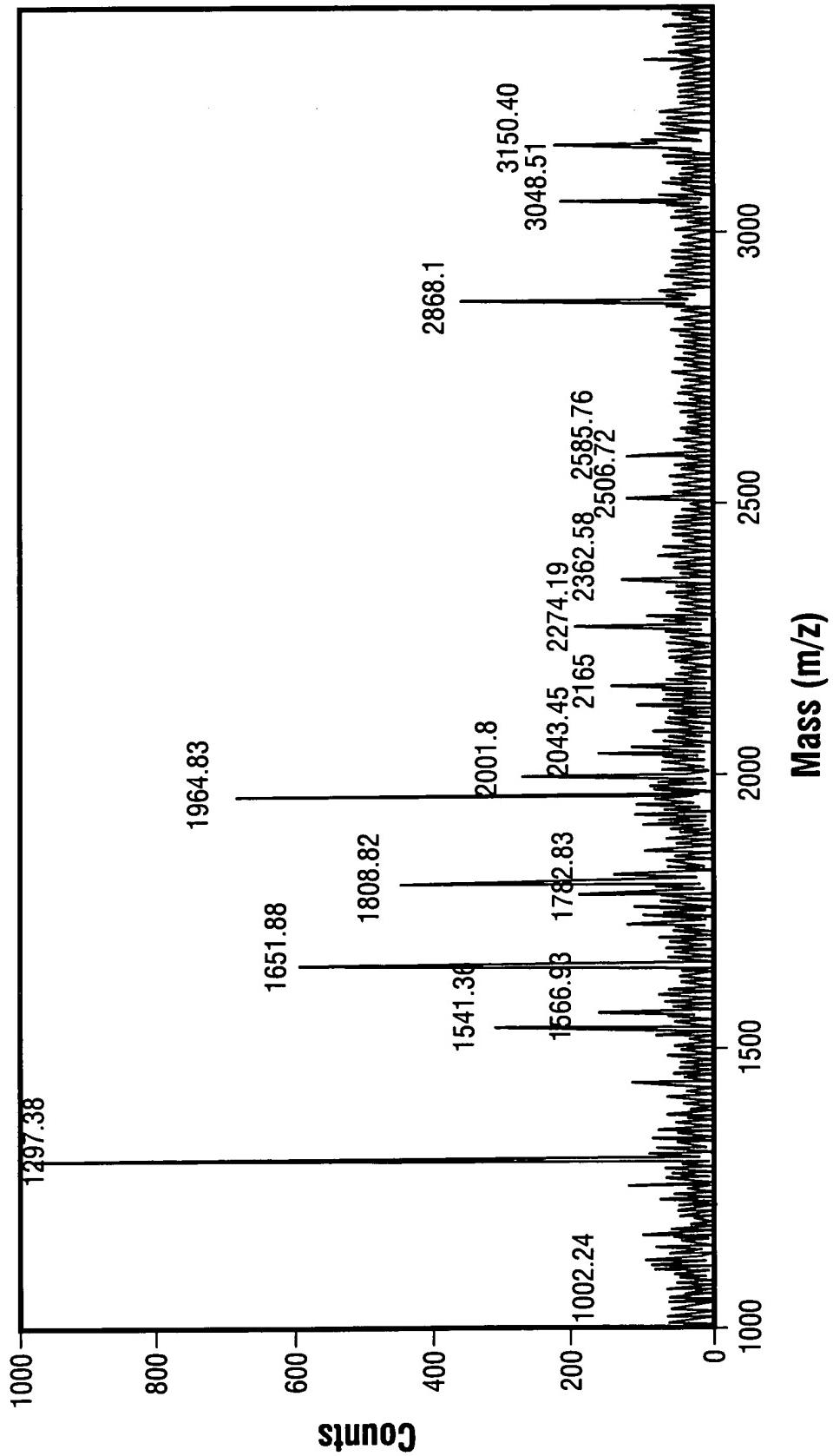


FIG. 23E (Band 5)



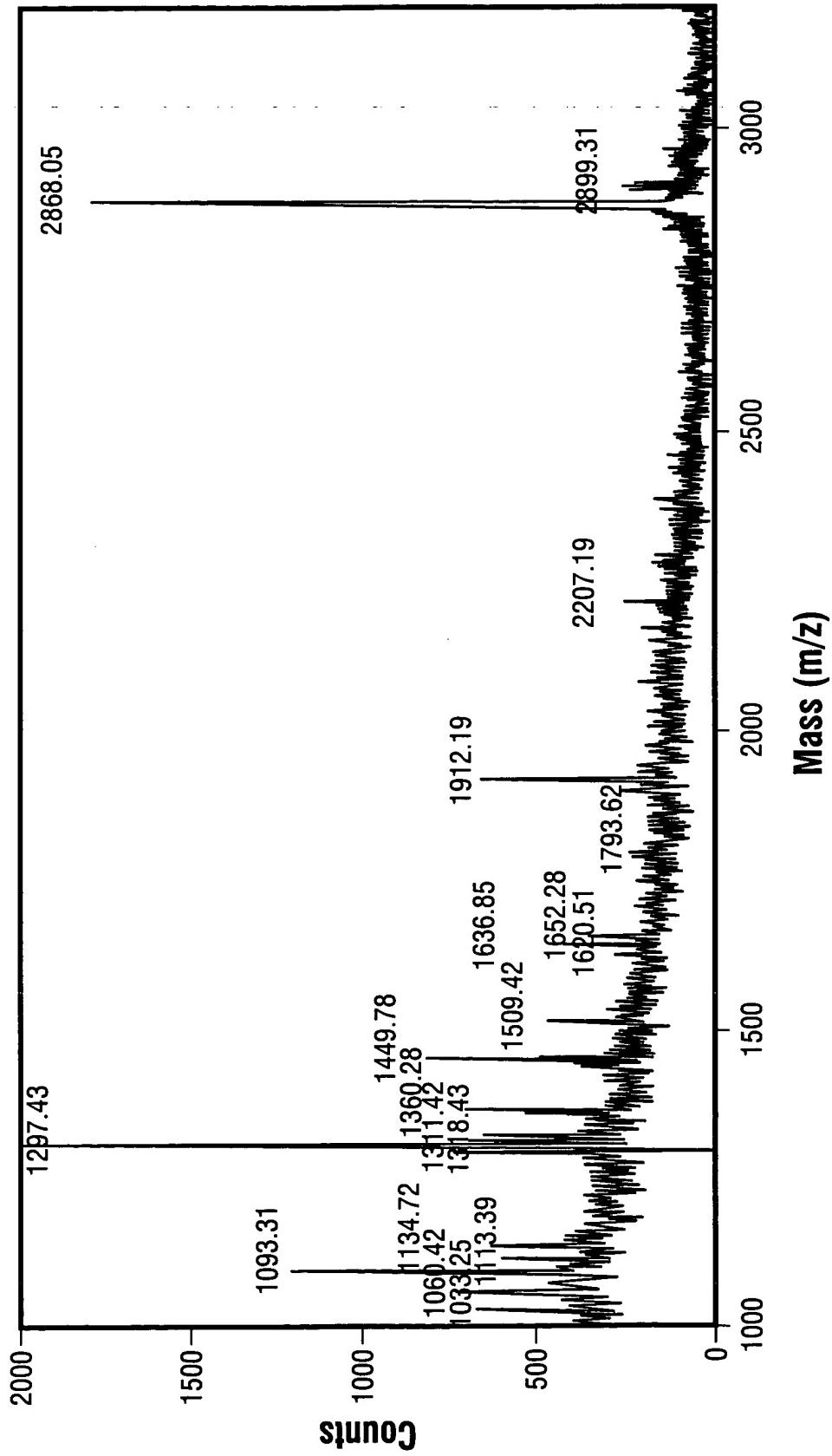
COMMENT: BARNES TRYPS #6

METHOD: LDE1000A ACCELERATING VOLTAGE: 20000
 MODE: LINEAR GRID VOLTAGE: 94.000 %
 GUIDE WIRE VOLTAGE: 0.075 %
 DELAY: 50 ON

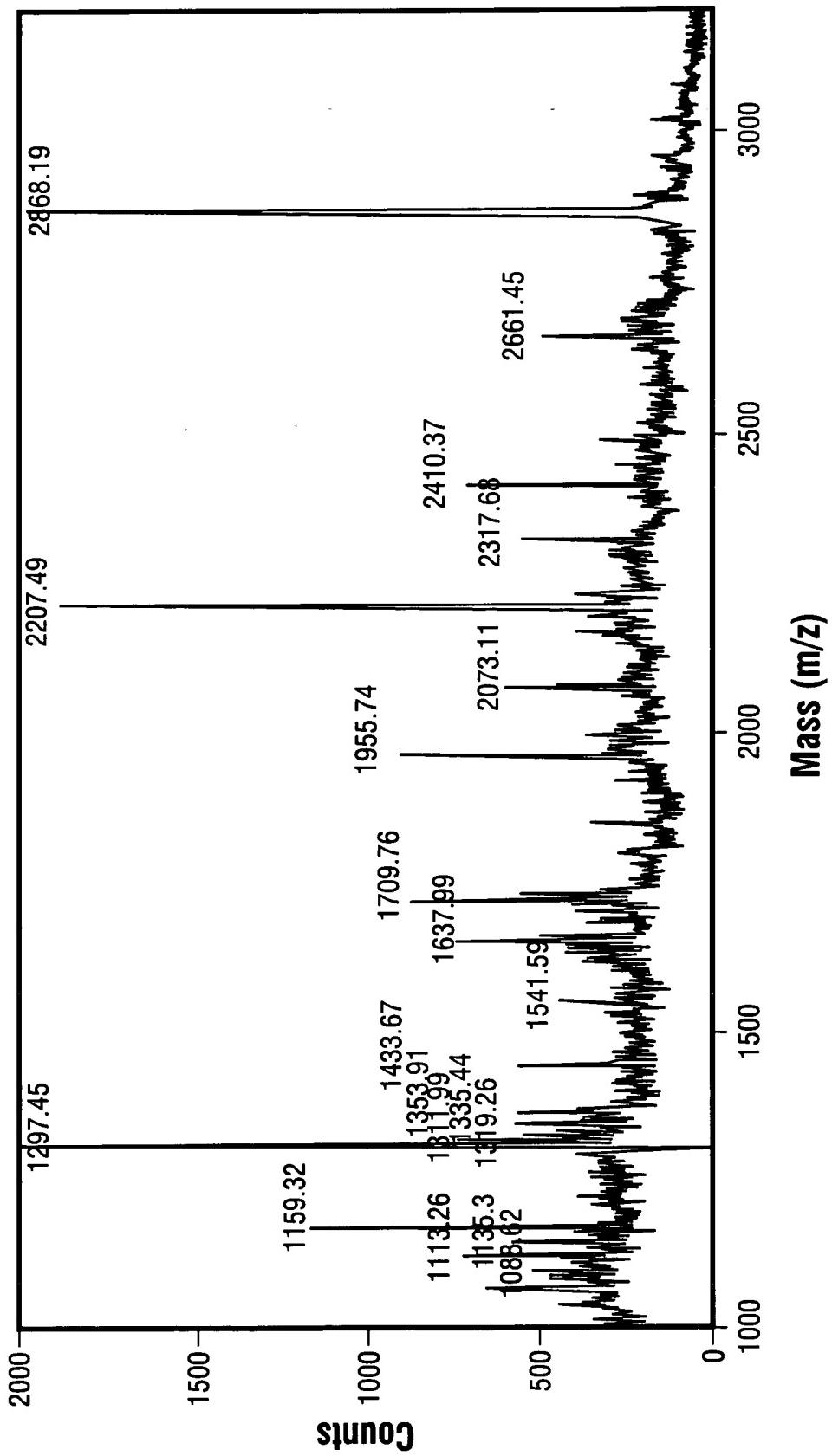
LASER: 1965 SCANS AVERAGED: 256
 PRESSURE: 4.06E-07
 LOW MASS GATE: 500.0

MIRROR RATIO: 1.060
 PSD MIRROR RATIO:
 TIMED ION SELECTOR: 16.1 OFF
 NEGATIVE IONS: OFF

FIG. 23F (Band 6)



MIRROR RATIO: 1.060
 PSD MIRROR RATIO:
 TIMED ION SELECTOR: 16.1 OFF
 NEGATIVE IONS: OFF



COMMENT: BARNES-8, TRYPSIN, 7.5%

METHOD: LDE1000A ACCELERATING VOLTAGE: 20000
MODE: LINEAR GRID VOLTAGE: 94.000 %
GUIDE WIRE VOLTAGE: 0.075 %
DELAY: 50 ON

LASER: 1965 SCANS AVERAGED: 256
PRESSURE: 4.01E-07 LOW MASS GATE: 500.0

MIRROR RATIO: 1.060
PSD MIRROR RATIO:
TIMED ION SELECTOR: 16.1 OFF
NEGATIVE IONS: OFF

Mass (m/z)

FIG. 23H (Band 8)

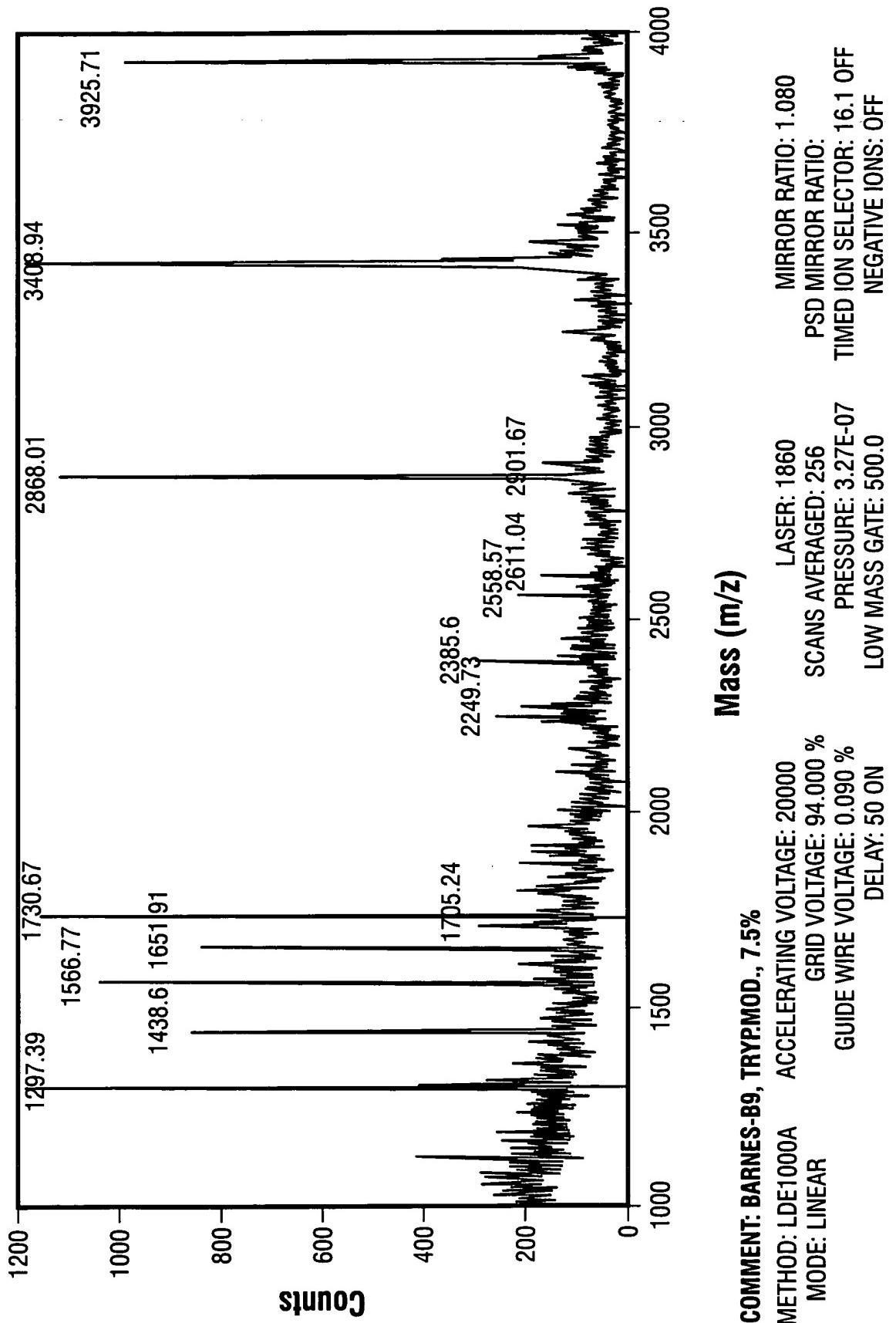


FIG. 23I (Band 9)

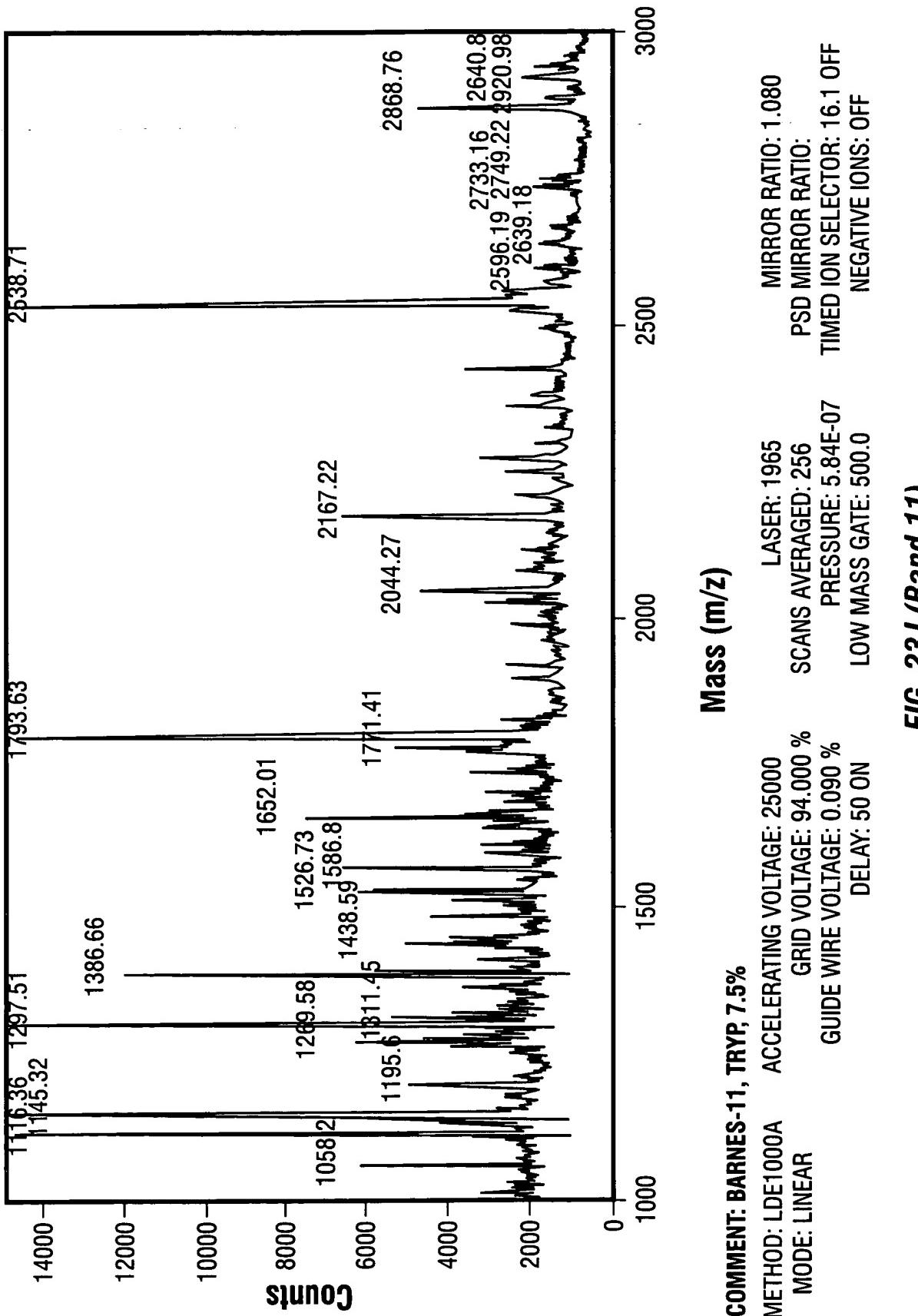


FIG. 23J (Band 11)

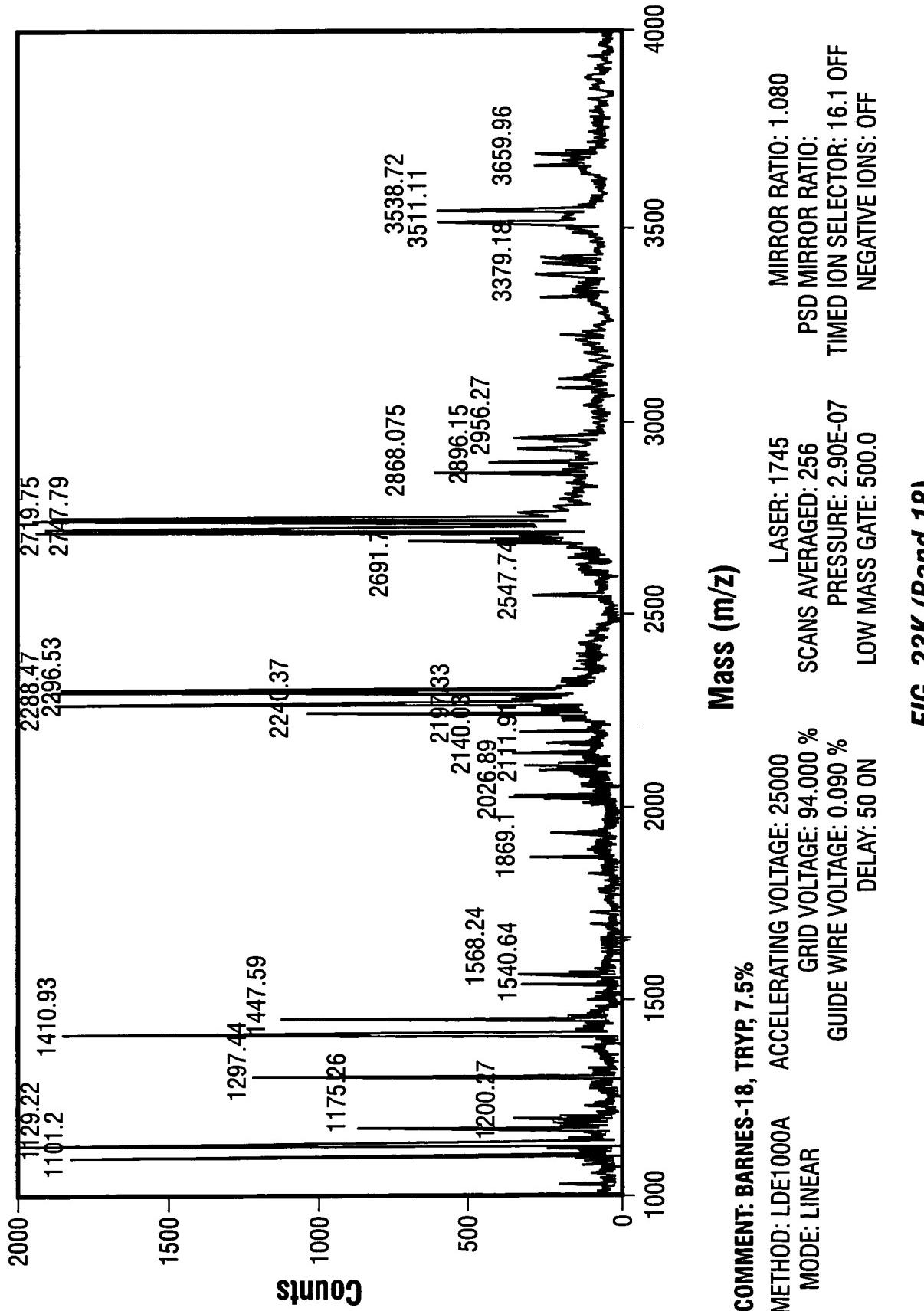


FIG. 23K (Band 18)

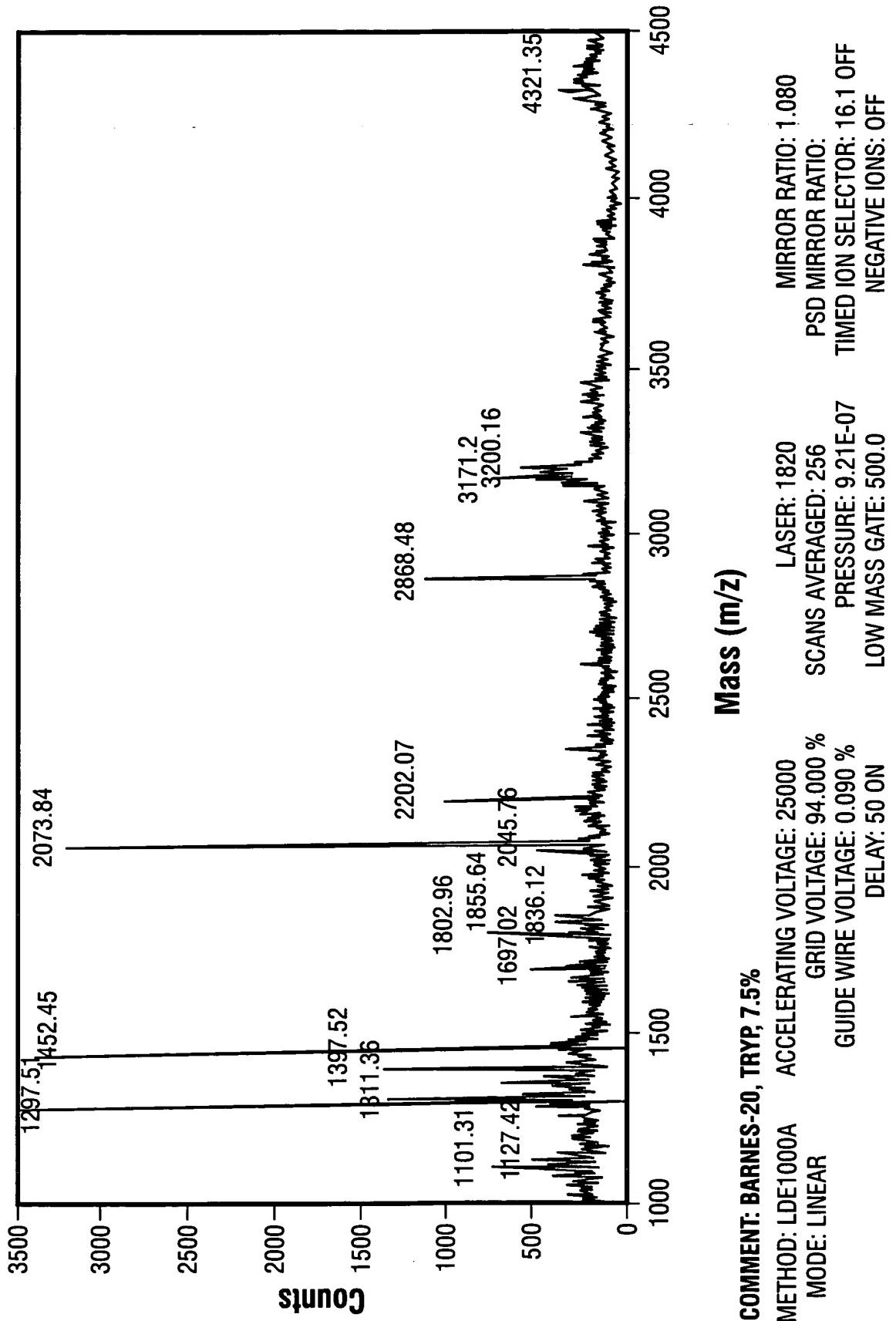


FIG. 23L (Band 20)

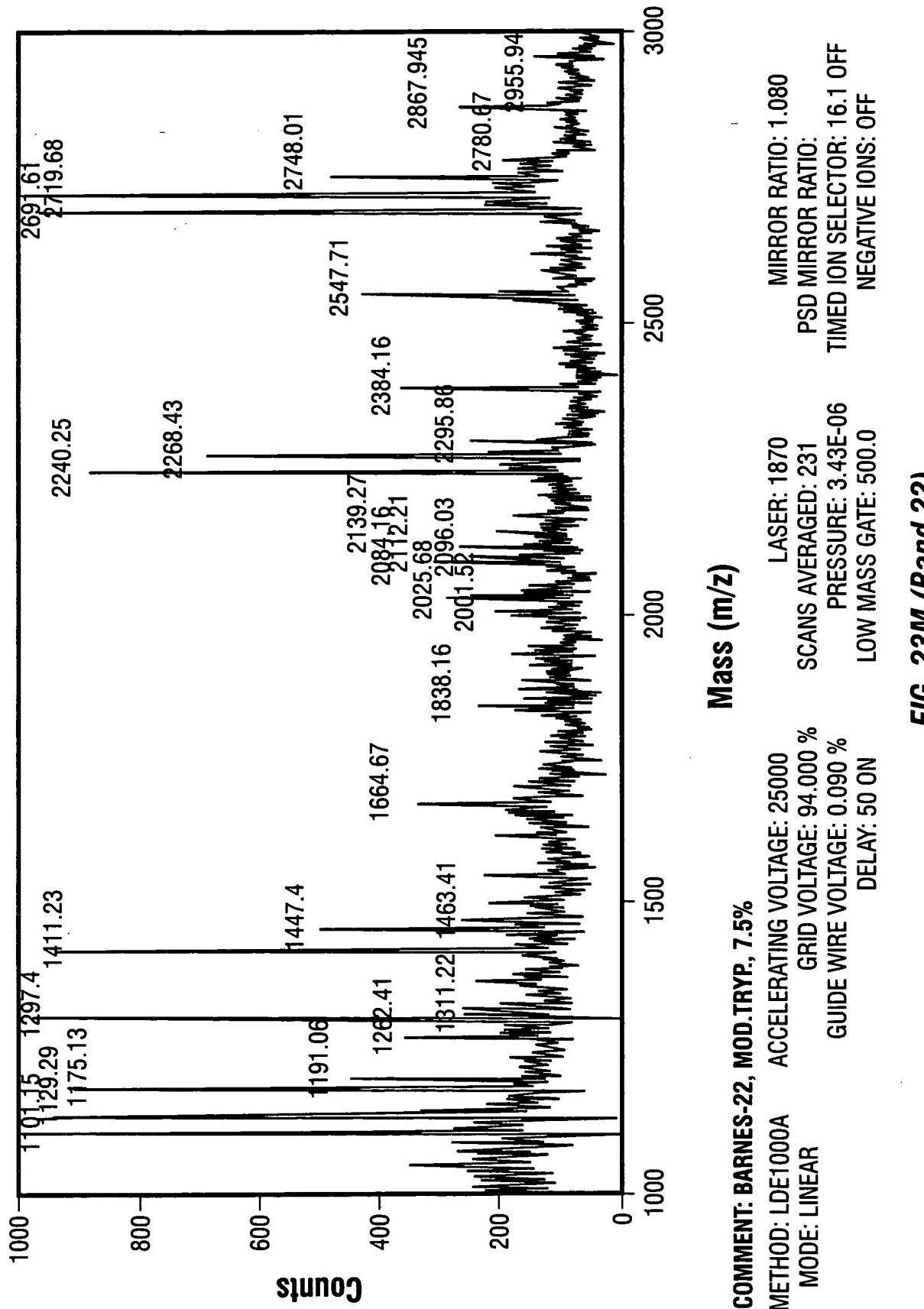


FIG. 23M (Band 22)

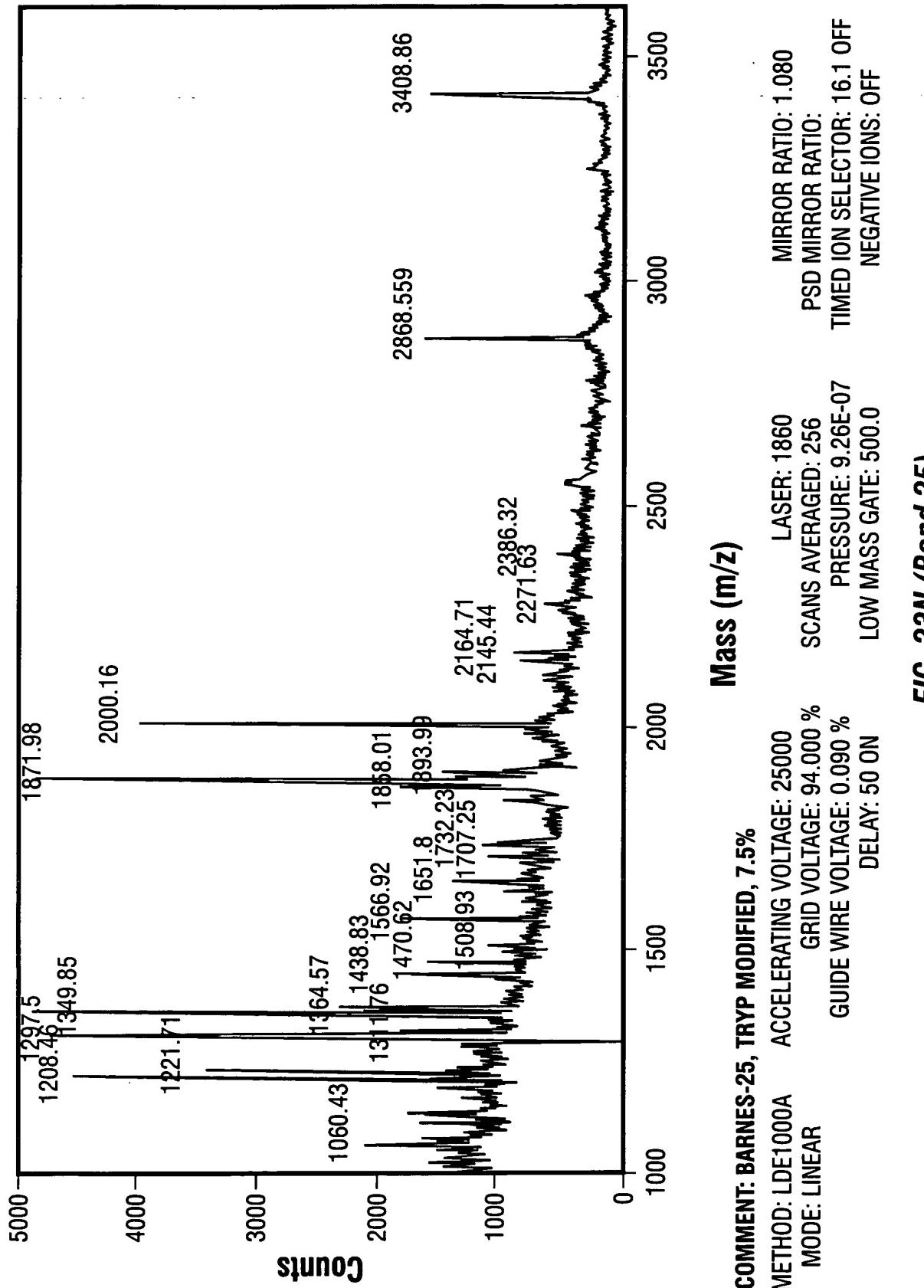


FIG. 23N (Band 25)

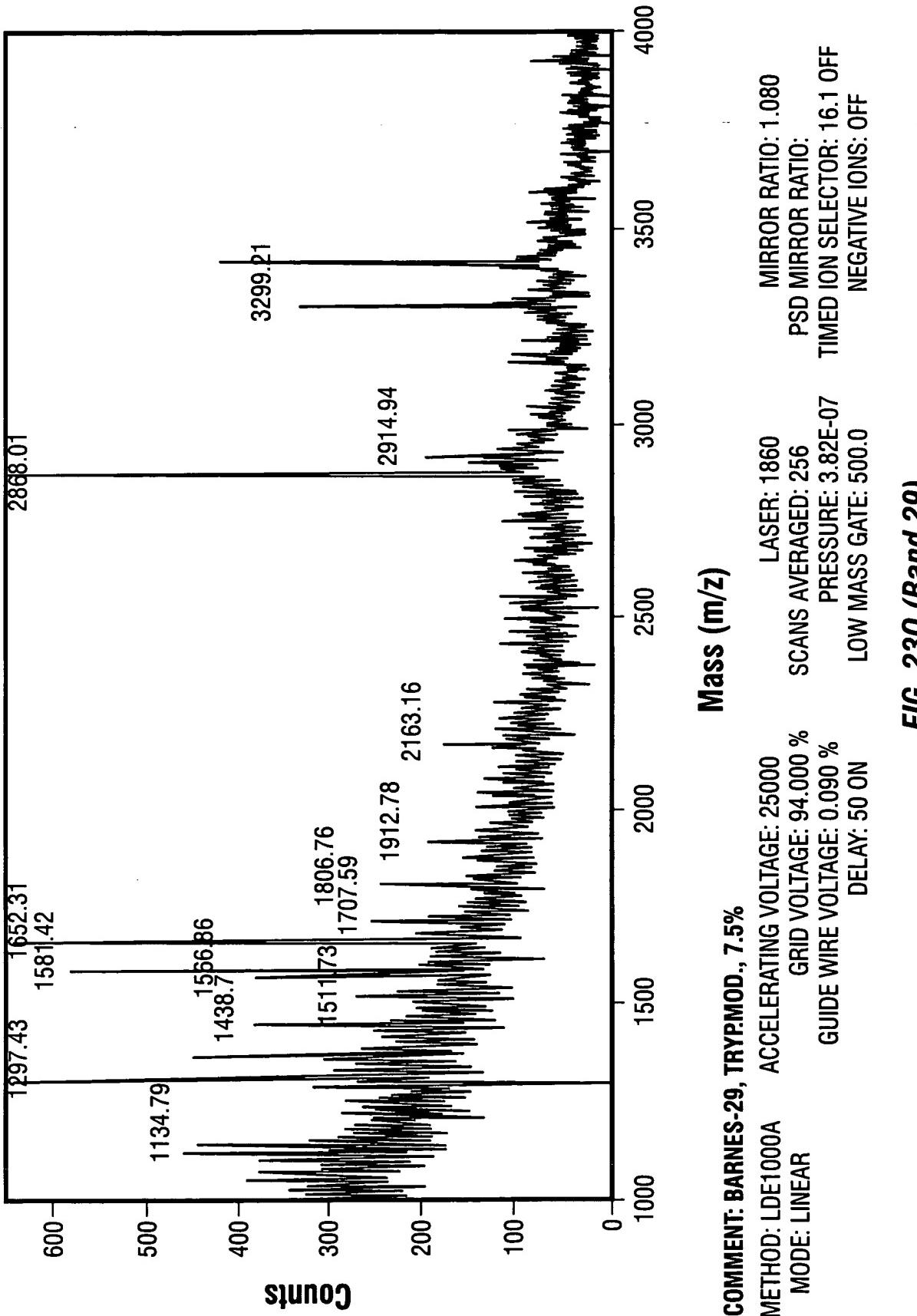


FIG. 230 (Band 29)

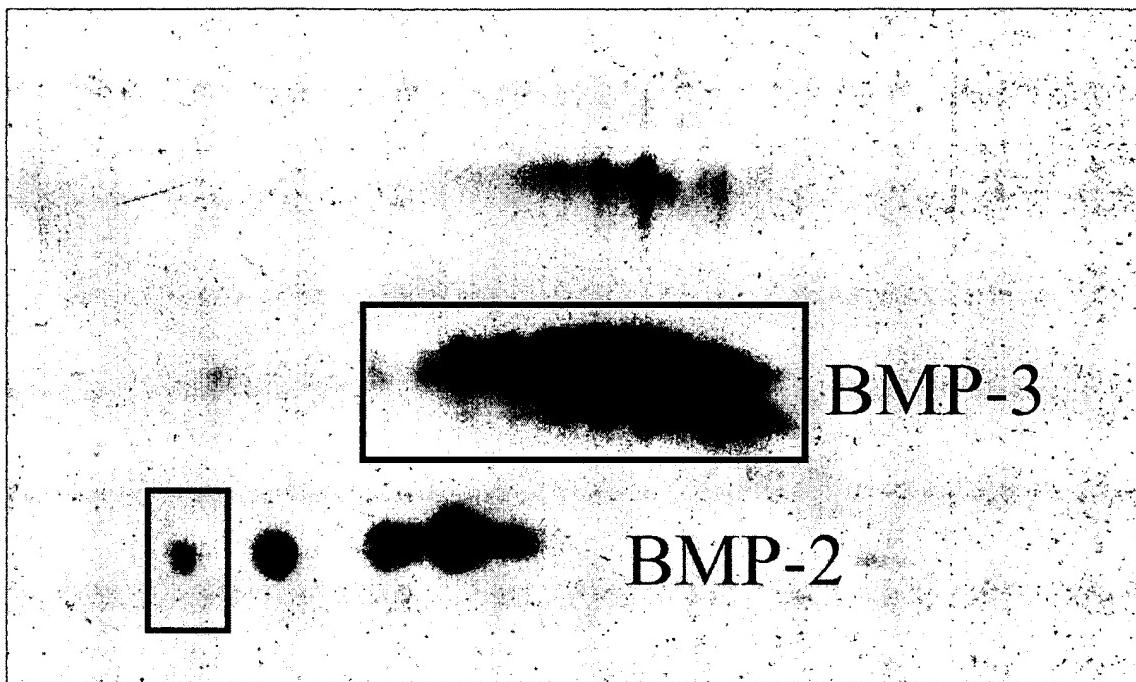


FIG. 25A

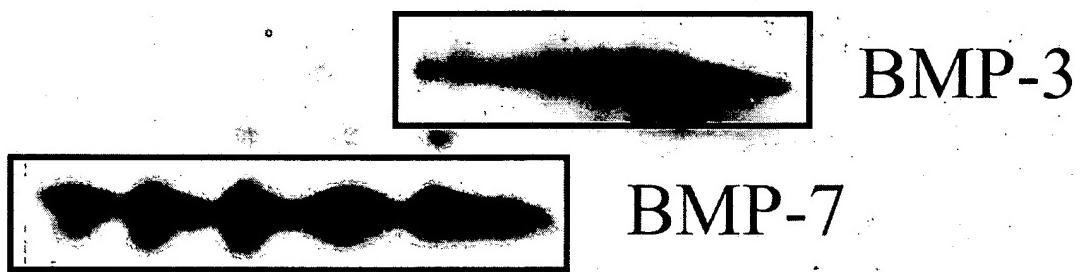


FIG. 25B

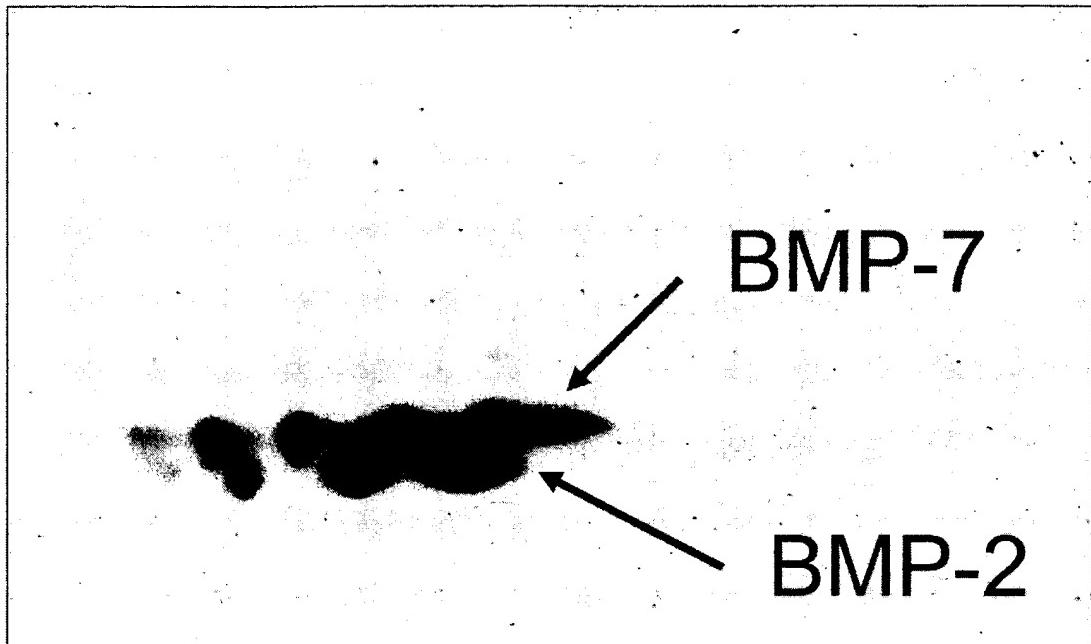


FIG. 25C

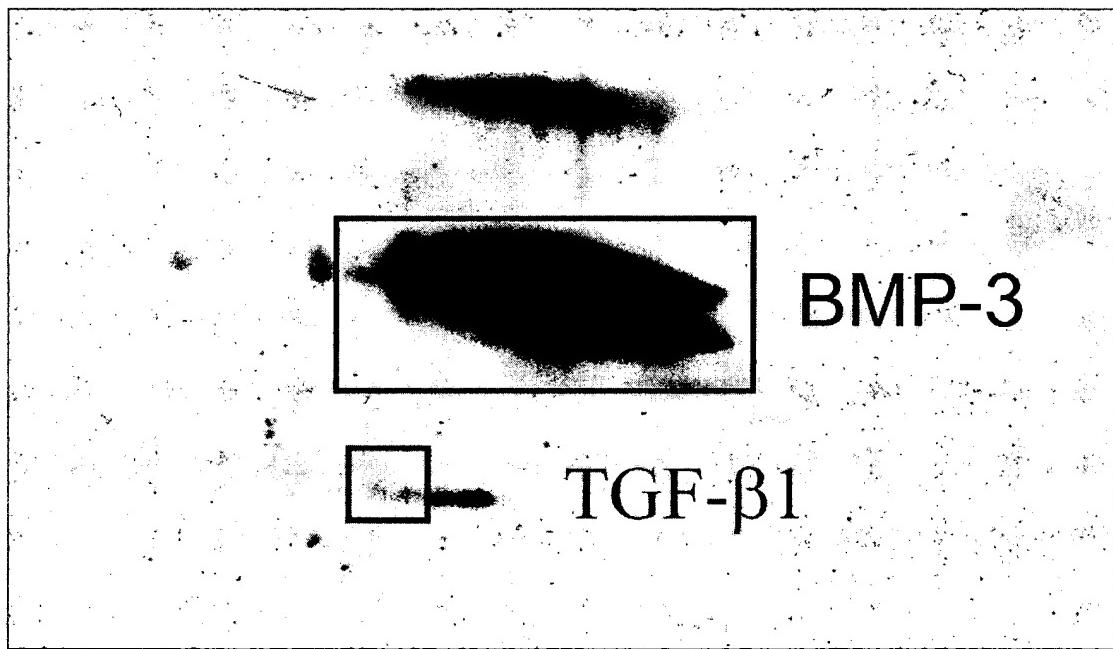
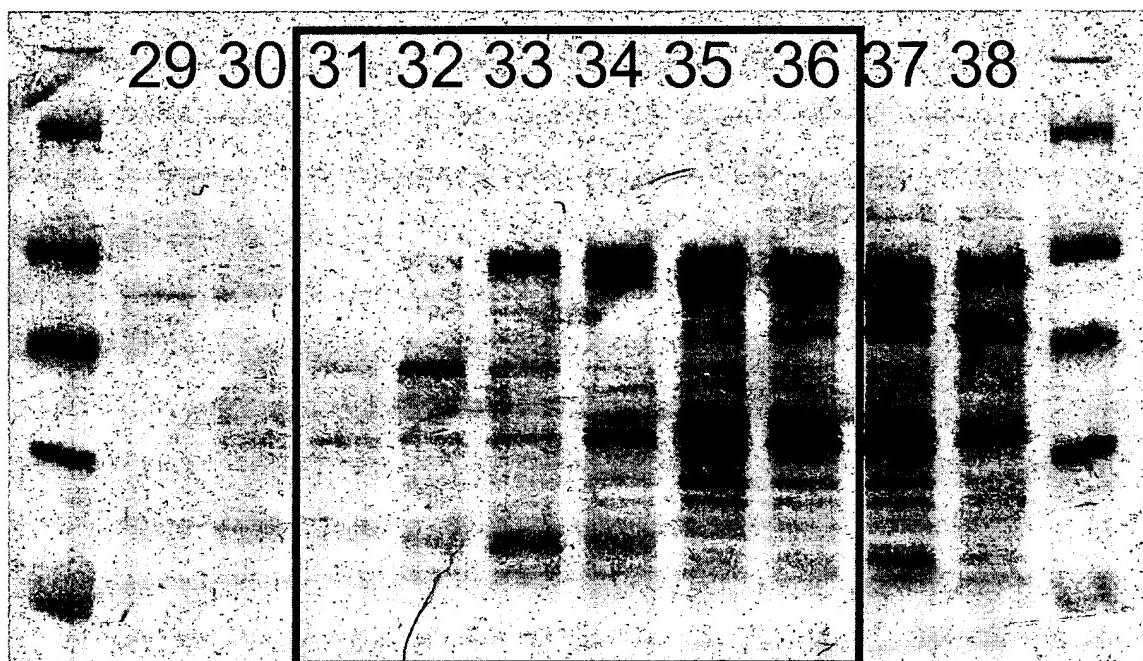


FIG. 25D

FIG. 26



- + +++ - + +++



FIG. 27



FIG. 28

FIG. 29A

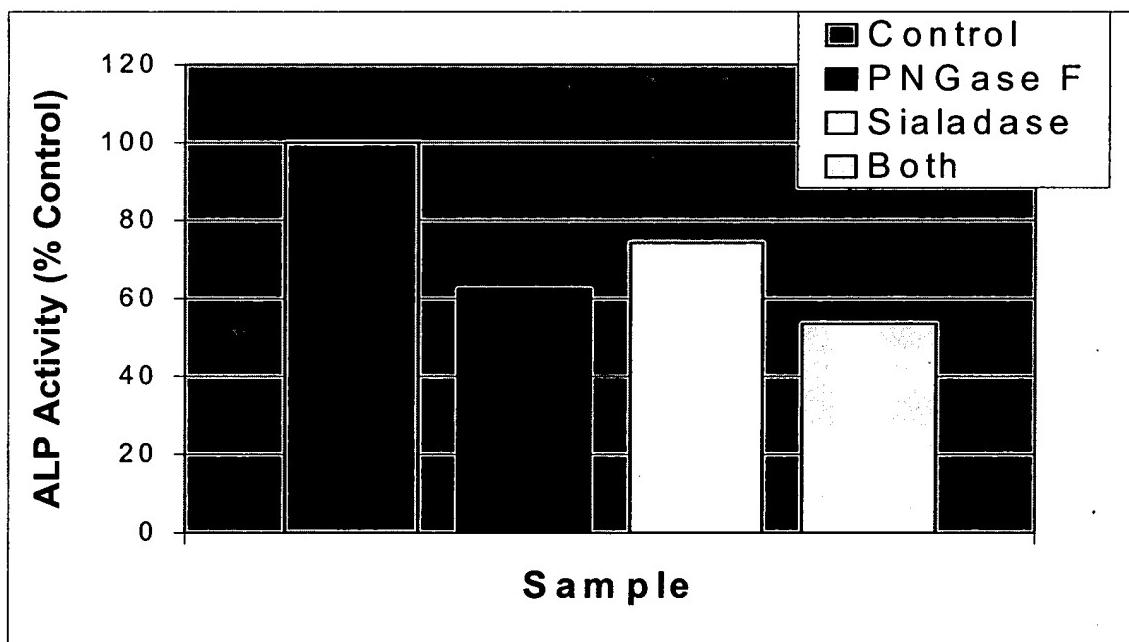
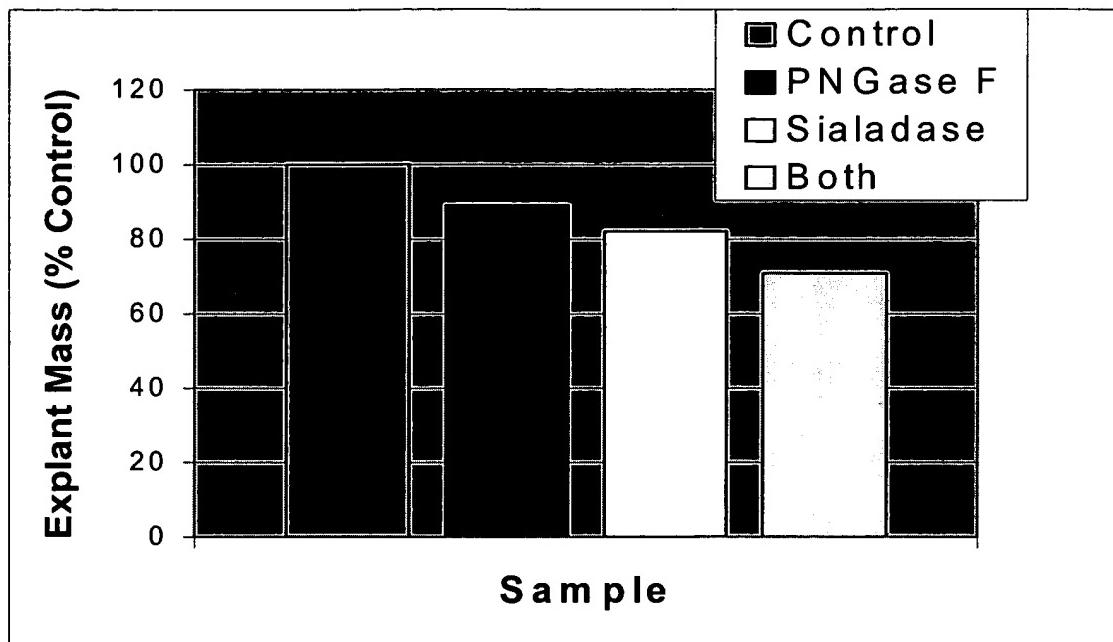


FIG. 29B

FIG. 30A

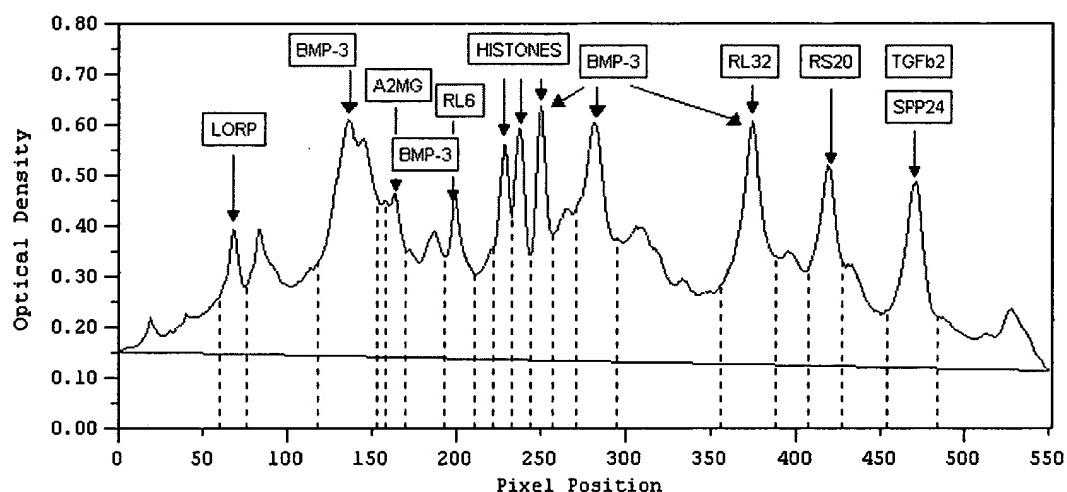


FIG. 30B

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